PUBLIC HEALTH REPORTS

VOL. 37 FEBRUARY 17, 1922 No. 7

CASES OF INFLUENZA REPORTED BY STATES.

COMPARISON OF THE FIRST SIX WEEKS OF THE YEARS 1920, 1921, AND 1922.

The accompanying table shows the number of cases of influenza reported for the first six weeks of 1922 by 24 States, compared with similar reports for the corresponding weeks of the years 1920 and 1921.

Weekly reports from States are sometimes sent before all the local health officers are heard from, and for this reason are not always complete, but the comparison of one year with another for the same State is not seriously affected by this difficulty.

All weeks ended on Saturday. The first week of 1922 ended January 7; in 1921 the first week ended January 8; and in 1920 it ended January 10.

Number of cases of influenza reported by States for the first six weeks of the years 1920 to 1922, inclusive.

State.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Alabama:						
1922	2	.....	5	3	26	95
1921	.....	.....	.....	.....	.....	5
1920	.....	.....	8	203	1,296	3,236
Arkansas:						
1922	83	40	64	88	192	232
1921	63	78	75	37	52	70
1920	35	53	179	595	5,666	6,599
California:						
1922	38	.....	28	48	92	845
1921	22	23	30	37	.....	98
1920	32	322	1,604	7,133	13,660	11,887
Connecticut:						
1922	5	7	9	22	109	518
1921	13	14	13	13	8	9
1920	1	14	1,123	4,664	5,666	4,868
Delaware:						
1922	.....	.....	5	2	7	2
1921	9	12	12	4	2	7
1920	1	.....	5	21	86	78
District of Columbia:						
1922	1	3	4	7	5	9
1921	2	2	2	4	4	1
1920	9	126	1,216	1,616	557	298
Florida:						
1922	3	6	21	6	15	35
1921	6	3	4	10	3	6
1920	2	10	484	1,547	1,581	1,735
Georgia:						
1922	21	19	52	64	74	81
1921	30	24	26	25	37	26
1920	27	27	95	617	3,256	5,411

Number of cases of influenza reported by States for the first six weeks of the years 1920 to 1922, inclusive—Continued.

State.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Illinois:						
1922	25	40	38	125	108	417
1921	42	18	27	19	28	35
1920	73	3,251	14,805	29,156	30,330	23,037
Kansas:						
1922	9	23	88	121	364	440
1921	13	9	13	29	5	9
1920	17	45	1,130	8,582	16,960	17,699
Kentucky:						
1922	17	25	18	51	332	.....
1921	10	8	40	19	33	21
1920	45	75	170	878	2,536	6,067
Louisiana:						
1922	7	8	4	8	10	39
1921	39	.....	.....	10	.....	.....
1920	52	27	123	763	1,901	3,690
Maine:						
1922	5	9	18	14	97	145
1921	18	6	14	7	1	2
1920	1	4	.....	387	936	3,942
Maryland:						
1922	21	40	52	93	110	189
1921	70	79	82	107	125	164
1920	.....	.....	.....	.....	4,935	8,942
Massachusetts:						
1922	7	12	18	66	398	1,469
1921	37	63	39	15	17	37
1920	40	54	490	3,730	9,731	12,389
Missouri:						
1922	7	16	8	20	71	99
1921	51	48	40	43	26	32
1920	.....	.....	.....	4,043	5,359	1,696
Nebraska:						
1922	.....	.....	.....	.....	6	6
1921	3	4	1	1	9	2
1920	2	1	154	1,815	3,998	6,048
New Jersey:						
1922	28	36	40	126	426	1,288
1921	34	26	22	33	32	20
1920	23	98	753	7,365	9,603	5,807
New Mexico:						
1922	.....	.....	1	.....	10	14
1921	.....	.....	.....	2	1	6
1920	8	4	61	260	1,576	1,166
New York (exclusive of New York City):						
1922	28	48	80	173	694	771
1921	86	109	96	79	43	44
1920	31	61	555	4,755	11,616	13,259
New York City:						
1922	56	57	110	1,230	5,731	7,070
1921	134	78	84	72	59	84
1920	100	384	5,690	30,456	21,388	8,091
Texas:						
1922	48	.....	5	5	57	141
1921	39	24	.....	.....	9	113
1920	.....	.....	.....	.....	11,265	6,788
Vermont:						
1922	.....	1	.....	1	7	2
1921	5	1	2	3	6	1
1920	.....	.....	25	89	272	796
Washington:						
1922	.....	.....	1	33	176	1,061
1921	.....	.....	.....	.....	.....	.....
1920	.....	.....	12	902	6,451	6,426
Wisconsin:						
1922	46	17	59	22	24	37
1921	64	81	44	43	25	48
1920	3	67	1,944	6,739	14,328	10,310
Total:						
1922	457	416	728	2,328	9,141	15,005
1921	790	710	666	612	525	840
1920	502	4,623	30,626	116,316	184,953	170,265
Number of States reporting cases:						
1922	19	17	22	22	24	23
1921	21	20	19	21	20	22
1920	18	17	20	22	24	24

INFLUENZA IN CITIES OF THE UNITED STATES, 1922.

The following table shows, by weeks, the number of cases of influenza reported in certain representative cities of the United States during the present year. The table here given makes possible a ready comparison of the reports for this year from cities in different parts of the country.

Another table will be found on page 363, which gives all cities of more than 10,000 population reporting cases of influenza to the Public Health Service for the week ended January 28, 1922, and the number of cases reported by the same cities for the corresponding week of last year.

Blanks in the table indicate that no cases of influenza were reported for the week. This does not always mean that no cases occurred. For the week ended February 11, 1922, it means in most instances that the report had not been received at the time of going to press.

Number of cases of influenza reported in certain cities of the United States, by weeks, 1922.

City.	Cases reported during week ended—					
	January—				February—	
	7	14	21	28	4	11
Little Rock, Ark.				1		6
Berkeley, Calif.	4	1	3	1	2	110
Los Angeles, Calif.	5	3	3	6	20	75
Sacramento, Calif.			3	8		12
San Francisco, Calif.	10	3	3	17	29	413
Bridgeport, Conn.				1	28	210
New Haven, Conn.				1	3	4
Waterbury, Conn.			1	3	1	7
Washington, D. C.	1	3	4	7	5	9
Tampa, Fla.	4	1			1	2
Atlanta, Ga.	6	2	3	3	15	18
Chicago, Ill.	15	24	12	24	67	298
La Salle, Ill.				1	7	1
Kansas City, Kans.				2		
Lawrence, Kans.				3	4	6
Topeka, Kans.	1		29	38	41	5
Lexington, Ky.					17	
Louisville, Ky.		1		7	115	224
New Orleans, La.		3	1	2		10
Auburn, Me.		3		3	21	7
Bath, Me.				4	3	2
Lewiston, Me.				6	44	7
Baltimore, Md.	13	23	15	41	51	104
Cumberland, Md.			2		3	5
Boston, Mass.	3	2	2	35	148	367
Cambridge, Mass.		2	1	8	32	102
Chelsea, Mass.					7	19
Haverhill, Mass.			2	4	16	58
Lowell, Mass.				1	18	58
Worcester, Mass.		1		2	140	356
Detroit, Mich.			5	7	10	16
Kansas City, Mo.		2		6	4	31
St. Louis, Mo.				2	2	12
Bayonne, N. J.	1			2	8	4
Englewood, N. J.				1	14	
Jersey City, N. J.		1		2	21	22
Kearny, N. J.		4	2	18	23	135
Newark, N. J.	11	19	16	44	44	
Orange, N. J.				4	28	20

Number of cases of influenza reported in certain cities of the United States, by weeks, 1922—Continued.

City.	Cases reported during week ended—					
	January—				February—	
	7	14	21	28	4	11
Paterson, N. J.				4	345	676
Trenton, N. J.		1		37	63	57
Albany, N. Y.	4	5	6	10	23	45
Buffalo, N. Y.				2	10	7
Mount Vernon, N. Y.				87	212	168
New York, N. Y.	56	57	110	1,230	5,731	7,070
Syracuse, N. Y.				2	12	32
Yonkers, N. Y.	1	1		2	4	4
Akron, Ohio	4	4	4	5	2	7
Cincinnati, Ohio	1		3	4	24	43
Cleveland, Ohio	1	8	4	6	15	29
Philadelphia, Pa.	4	4	2	7	14	49
Pittsburgh, Pa.					399	957
Providence, R. I.				4	16	83
Columbia, S. C.				3		
Dallas, Tex.		2		3		
Salt Lake City, Utah						17
Rutland, Vt.			1			
Alexandria, Va.				5	3	
Roanoke, Va.	10	2		1	2	2
Seattle, Wash.			1	28	13	
Milwaukee, Wis.					3	

DEATHS FROM INFLUENZA AND PNEUMONIA COMBINED.

COMPARISON OF THE FIRST SIX WEEKS OF THE YEARS 1919–1922, INCLUSIVE, FOR CERTAIN LARGE CITIES OF THE UNITED STATES.

The accompanying table gives the number of reported deaths from influenza and pneumonia (all forms), combined, during the first six weeks of the years 1919, 1920, 1921, and 1922, in 36 large cities of the United States.

This is a continuation of the table printed on page 269 of the Public Health Reports of February 10, 1922 (vol. 37, No. 6).

The weeks for which figures are given all ended on Saturday, the "first" week for each year ending on the following days, respectively: January 4, 1919; January 10, 1920; January 8, 1921; and January 7, 1922.

The figures for 1919 and 1920 were taken from the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce, supplemented by reports to the Public Health Service. For 1921 and 1922 the figures are taken from reports made by the city health officers to the Public Health Service.

Blanks in the table indicate that no reports of deaths from influenza or pneumonia were received for the week. This does not always indicate that no deaths from these diseases occurred. In the sixth week of 1922 it means in most instances that the report has been delayed.

Number of deaths from influenza and pneumonia (all forms) combined.

City.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Birmingham, Ala.:						
1922	8	10	14	6	13	4
1921	7	14	6	4	9	9
1920	13	9	16	14	22	18
1919	36	44	52	41	29	21
Los Angeles, Calif.:						
1922	18	19	14	21	26	29
1921	12	19	9	13	15	12
1920	16	18	19	22	42	88
1919	99	151	178	177	104	47
Oakland, Calif.:						
1922	4	5	5	----	8	----
1921	4	3	8	7	9	4
1920	4	8	20	24	55	54
1919	66	92	111	67	38	18
San Francisco, Calif.:						
1922	11	12	4	12	9	----
1921	----	5	8	9	7	11
1920	14	26	48	59	115	137
1919	194	290	310	149	59	41
Denver, Colo.:						
1922	22	11	10	17	18	16
1921	25	22	23	11	16	21
1920	21	18	24	49	159	160
1919	65	47	35	24	29	30
New Haven, Conn.:						
1922	5	1	5	4	13	10
1921	4	7	7	7	2	6
1920	6	8	10	19	20	60
1919	40	38	27	26	20	12
Washington, D. C.:						
1922	20	22	27	27	25	22
1921	22	22	14	9	9	12
1920	22	27	81	181	164	92
1919	139	109	107	73	60	42
Atlanta, Ga.:						
1922	13	7	9	7	20	17
1921	10	8	9	5	7	18
1920	19	11	10	15	32	75
1919	[1] 40	[1] 40	[1] 54	[1] 57	[1] 54	[1] 28
Chicago, Ill.:						
1922	48	43	63	65	72	80
1921	64	79	89	102	92	90
1920	107	153	472	1,109	1,005	494
1919	321	269	328	341	277	194
Indianapolis, Ind.:						
1922	20	11	9	17	29	42
1921	15	12	13	13	21	6
1920	18	16	21	36	92	124
1919	34	40	25	28	25	23
Louisville, Ky.:						
1922	6	12	18	7	16	24
1921	6	4	5	5	2	2
1920	10	10	9	18	40	52
1919	22	20	21	30	20	19
New Orleans, La.:						
1922	13	14	14	13	4	25
1921	18	18	21	[2] 3	12	21
1920	27	27	27	32	36	62
1919	94	141	202	201	125	58
Baltimore, Md.:						
1922	32	25	24	26	29	27
1921	33	20	24	18	26	56
1920	20	35	24	59	122	268
1919	48	75	83	150	138	126
Boston, Mass.:						
1922	21	17	36	28	33	38
1921	27	23	36	33	22	10
1920	28	28	45	85	158	255
1919	244	227	158	153	110	89
Cambridge, Mass.:						
1922	5	8	3	4	7	7
1921	4	5	5	5	1	3
Cambridge, Mass.—Continued.						
1920	8	7	8	14	22	28
1919	39	22	20	16	[2] 5	10
Fall River, Mass.:						
1922	5	4	3	6	5	7
1921	14	5	11	4	5	8
1920	7	10	5	3	5	16
1919	10	18	16	14	17	17
Lowell, Mass.:						
1922	4	7	5	4	4	6
1921	7	6	8	3	6	4
1920	5	4	2	7	12	10
1919	13	[1] 10	20	26	11	[1] 7
Worcester, Mass.:						
1922	5	10	11	7	16	16
1921	4	7	13	9	4	10
1920	10	9	7	14	15	44
1919	40	36	44	22	23	21
Minneapolis, Minn.:						
1922	10	6	9	9	6	9
1921	13	14	10	8	10	16
1920	12	10	9	63	168	125
1919	37	45	24	32	31	31
St. Paul, Minn.:						
1922	7	13	7	3	8	----
1921	9	5	9	9	----	7
1920	4	10	26	75	80	63
1919	39	25	14	12	15	13
Kansas City, Mo.:						
1922	15	13	14	25	25	28
1921	17	17	19	13	14	17
1920	13	29	96	120	220	167
1919	49	50	68	45	58	40
Omaha, Nebr.:						
1922	11	9	17	12	16	12
1921	8	7	4	14	----	4
1920	4	7	13	45	62	63
1919	25	25	17	17	11	12
Newark, N. J.:						
1922	13	15	20	20	33	29
1921	18	14	15	7	12	13
1920	17	14	30	55	116	142
1919	72	66	57	53	50	45
Buffalo, N. Y.:						
1922	6	20	13	19	21	15
1921	20	18	18	20	13	18
1920	10	7	19	17	67	141
1919	48	[1] 19	90	123	90	75
New York, N. Y.:						
1922	215	263	284	302	481	596
1921	235	216	204	203	199	212
1920	218	261	511	1,308	1,988	1796
1919	753	870	998	1,193	1,153	893
Rochester, N. Y.:						
1922	5	11	12	14	6	7
1921	4	3	6	8	5	5
1920	13	7	12	23	50	52
1919	59	26	17	21	12	16
Syracuse, N. Y.:						
1922	4	6	4	6	7	7
1921	4	8	3	5	6	2
1920	9	8	10	31	89	78
1919	8	13	4	14	18	10
Cincinnati, Ohio:						
1922	14	20	15	19	21	27
1921	14	16	13	11	18	16
1920	14	12	17	25	38	62
1919	51	18	18	26	23	39
Cleveland, Ohio:						
1922	----	----	30	28	25	18
1921	25	22	23	24	31	28
1920	21	25	26	41	158	258
1919	132	94	92	92	108	100

[1] Pneumonia (all forms) deaths only.
[2] Influenza deaths only.

Number of deaths from influenza and pneumonia (all forms) combined—Continued.

City.	Week number.					
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.
Columbus, Ohio:						
1922	5	9	4	10	8	6
1921	8	8	12	12	13	12
1920	15	9	8	22	59	118
1919	15	14	10	20	19	11
Toledo, Ohio:						
1922	6	9	8	12	7	6
1921	----	3	9	10	5	4
1920	9	8	9	18	54	50
1919	19	15	19	20	15	6
Portland, Oreg.:						
1922	4	7	4	6	5	15
1921	6	5	7	6	4	8
1920	13	8	9	17	21	57
1919	55	101	123	122	50	15
Philadelphia, Pa.:						
1922	73	98	87	86	85	91
1921	72	83	85	101	114	108
1920	55	75	109	153	289	564
1919	142	194	229	259	308	262
Providence, R. I.:						
1922	13	8	12	17	11	15
1921	14	6	5	8	14	11
1920	12	13	8	14	39	88
1919	47	59	62	61	35	30
Nashville, Tenn.:						
1922	2	7	----	----	----	5
1921	2	8	4	----	10	9
1920	6	11	6	12	8	23
1919	20	17	21	21	17	15
Richmond, Va.:						
1922	8	9	9	4	8	9
1921	5	5	13	6	5	7
1920	2	9	6	21	35	38
1919	50	26	34	30	23	11
Total:						
1922	671	761	823	863	1,120	1265
1921	750	737	768	725	738	800
1920	802	947	1,771	3,820	5,657	5922
1919	3,165	3,346	3,688	3,756	3,180	2427

THE DETERMINATION OF HYDROGEN ION CONCENTRATION.

By FRANCIS H. MCCRUDDEN, Surgeon (R), United States Public Health Service; United States Veterans' Hospital No. 36, Boston, Mass.

The acidity of a solution may be expressed in terms of concentration of acid or in terms of hydrogen ion concentration. Though the significance and relationship of these two modes of expression and the practical determination of degree of acidity in both senses have become of considerable practical importance in medicine, I have not yet seen a statement of the subject simple enough to enable the physician with very little knowledge of chemistry to understand and actually determine hydrogen ion concentration. The statement which follows, framed especially for the bacteriologist with very little knowledge of chemistry, is intended as a step in this direction.

1. CONCENTRATION OF ACID.

Normal solutions.—The concentration of acid solutions is not usually expressed in percentage strength but as normal (N), half normal $\left(\frac{N}{2}, 0.5\ N\right)$, tenth normal $\left(\frac{N}{10}, 0.1\ N\right)$, etc. A normal solution of acid is one containing one gram of hydrogen per liter replaceable by a base. This chemical use of the term "normal" with reference to acids and alkalis is not to be confused with the use of the term in the expression "normal salt solution" where it means a solution normal to, or containing as much salt as blood and tissue fluids—about three-quarters of 1 per cent.

Examples: A normal solution of hydrochloric acid contains 36.5 grams HCl per liter (atomic weights: H = 1, Cl = 35.5). A normal solution of sulphuric acid (H_2SO_4), which has two replaceable hydrogens in the molecule, contains 49 grams, half a molecular weight, per liter (atomic weights: H = 1, S = 32, O = 16). Crystalline oxalic acid has two replaceable hydrogens and two molecules of water of crystallization ($C_2O_4H_2 . 2\ H_2O$; molecular weight, 126); a normal solution contains 63 grams oxalic acid. The formula of acetic acid is $CH_3\ COOH$ (molecular weight, 60), and it has only one hydrogen atom replaceable by base; a normal solution contains 60 grams pure acetic acid. In determining the amount of acid to be used in making up a normal solution we must consider whether the acid is monobasic, like hydrochloric acid, or dibasic, like sulphuric acid; we must consider its whole molecular weight, including any water of crystallization present as in the case of oxalic acid; and we must consider whether, as in the case of acetic acid and most other organic acids, some of the hydrogen is not replaceable by base.

Experiments on equivalence of normal solution.—Make 500 c. c. of approximately $\frac{N}{10}$ hydrochloric acid, sulphuric acid, oxalic acid, acetic acid, and sodium hydroxide as follows:

Hydrochloric acid: Make 4.9 c. c. of concentrated hydrochloric acid (U. S. P. specific gravity 1.155, containing about 32 per cent HCl) up to 500 c. c.

Sulphuric acid: Make 1.42 c. c. of concentrated sulphuric acid (U. S. P. specific gravity 1.83, containing about 94 per cent $H_2\ SO_4$) up to 500 c. c.

Oxalic acid: Dissolve 3.150 grams $C_2H_2O_4 . 2H_2O$ in 500 c. c. water.

Acetic acid: Make 2.9 c. c. glacial acetic acid (U. S. P. specific gravity 1.048, containing 99 per cent $HC_2H_3O_2$) up to 500 c. c.

Sodium hydroxide: Dissolve 2 grams of sodium hydroxide in 500 c. c. water.

Measure out 10 c. c. of each of the acid solutions into small flasks and to each add two drops of 1–2 per cent alcoholic solution of phenolphthalein. Run $\frac{N}{10}$ sodium hydroxide drop by drop into each flask until the solution just turns pink.

Oxalic acid practically 100 per cent pure, from which accurately $\frac{N}{10}$ oxalic acid may be prepared, is readily obtained. The other solutions can be made only approximately $\frac{N}{10}$ at first; but after comparison with the accurate $\frac{N}{10}$ oxalic acid, they can be corrected by dilution with water or addition of acid or alkali.

Normality and percentage strength.—Since equal volumes of all normal acids will neutralize equal volumes of all normal alkali solutions, the use of acids and bases in the form of normal or fractionally normal solutions, rather than in percentage strength, is of practical convenience in simplifying calculations.

Measurement of acid concentration.—The concentration of acid in a solution may be determined by titration with standard alkali solution.

2. STRENGTH OF ACIDS.

A liter of normal acetic acid will neutralize the same amount of alkali as a liter of normal hydrochloric acid. In this respect the "acidity" of a liter of normal acetic acid is the same as that of a liter of normal hydrochloric acid. But acid solutions have other properties besides that of neutralizing alkalis which are proportional to the "acidity" of the solution and can, therefore, serve to measure "acidity." If a solution of cane sugar is boiled with acid, the sugar breaks down into one molecule of glucose and one of levulose:

$$\underset{\text{Cane sugar}}{C_{12}H_{22}O_{11}} + H_2O = \underset{\text{Glucose}}{C_6H_{12}O_6} + \underset{\text{Levulose}}{C_6H_{12}O_6}$$

The acid does not appear to take a direct part in the reaction; it acts as a stimulator to hasten the reaction, the rate at which the reaction takes place depending on the concentration of the acid. A tenth normal hydrochloric acid solution has twice as great a stimulating effect as a twentieth normal, and half as great an effect as a fifth normal solution. And a tenth normal acetic acid solution has twice as great an effect as a twentieth normal, and half as great an effect as a fifth normal solution. *But* a tenth normal solution of hydrochloric acid has a far greater effect as a stimulator than a tenth normal solution of acetic acid. In this respect the "acidity" of the two tenth-normal solutions is not the same. Hydrochloric acid is a "stronger" acid than acetic acid. To understand the apparent contradiction in the two different senses of the word "acidity", it is necessary to understand something about the dissociation theory.

Experiments on strength of acid.—Make an $\frac{M}{2}$ (half molecular) solution of cane sugar (dissolve 17.1 grams of sugar and make up to 100 c.c.).

Prepare the following solutions in test tubes:

(*a*) 1 c.c. $\frac{M}{2}$ cane sugar + 1 c.c. $\frac{N}{10}$ HCl + 1 c.c. water.

(*b*) 1 c.c. $\frac{M}{2}$ cane sugar + 0.5 c.c. $\frac{N}{10}$ HCl + 1.5 c.c. water.

(*c*) 1 c.c. $\frac{M}{2}$ cane sugar + 3.0 c.c. $\frac{N}{10}$ acetic acid.

(*d*) 1 c.c. $\frac{M}{2}$ cane sugar + 2 c.c. water.

Boil each of these solutions exactly one minute. Cool. Dilute to 25 c.c. Add each solution drop by drop from a buret to a boiling Fehling's solution (4 c.c. of the copper solution and 6 c.c. of the alkaline tartrate) until the Fehling's solution is decolorized (in test (*c*) the Fehling's will still remain blue after all the sugar has been added, showing that less than 10 per cent of the sugar has been hydrolyzed). Calculate the amount of reducing sugar present, and from this the percentage of cane sugar hydrolyzed in cases (*a*) and (*b*).

3. THE DISSOCIATION THEORY.

Molecules in solution.—It has long been known that certain properties of a solvent are modified by substances in solution. An aqueous solution of cane sugar, for example, has a higher boiling point, a lower freezing point, and a lower vapor pressure than pure water, and it exerts an osmotic pressure. The rise in boiling point, the fall in freezing point, the diminution in vapor pressure, and the osmotic pressure are proportional to the amount of sugar in solution. The same is true for aqueous solutions of other substances—urea, for example. The effect of one gram molecule (60 grams) of urea ($CO(NH_2)_2$) on these properties of the solutions is precisely the same as that of one gram molecule (342 grams) of cane sugar ($C_{12}H_{22}O_{11}$) or one gram molecule of any other substance. All this indicates that the effect of substances in solution on the properties of the solution depends on the number of molecular weights of the substance per unit volume of solution; or, translated into terms of the molecular hypothesis, the number of dissolved molecules per unit volume.

Ions in solution.—There are apparent exceptions to the foregoing. It holds true for sugar, urea, and most other organic substances; but the effect of salts, strong acids, and bases is much greater. Sodium chloride, hydrochloric acid, sodium hydroxide, for example, in dilute solution have just twice as great an effect, and sodium sulphate three times as great an effect as they should. The deviations are due to the dissociation of these substances into ions. Sodium chloride (NaCl) is dissociated into a positive ion, or cation, Na, and a negative ion, or anion, Cl; hydrochloric acid (HCl) is dissociated into the cation H and the anion Cl; sodium hydroxide (Na OH) into the cation Na and the anion OH; sodium suphate (Na_2SO_4) into two Na cations and the anion SO_4. The quantitative effect of these ions on the physical properties of solutions is the same as that of whole undissociated molecules.

Electrolytes.—Solutions of sodium chloride, hydrochloric acid, sodium hydroxide, and other substances which dissociate, transmit the electric current; such compounds are called electrolytes. The current is transmitted by the moving ions; each cation carries a positive charge, each anion a negative charge of electricity. When an electric current is passed through a solution of silver nitrate, for example, the Ag cations pass with the current to the cathode, give up their positive charge, and are deposited as molecular silver; the NO_3 anions pass to the anode and are there discharged. Solutions of urea, cane sugar, and other substances which do not dissociate, do not transmit the electric current; such substances are called non-electrolytes. Besides the electrolytes like sodium chloride which are completely dissociated in dilute solution, and the non-electrolytes

like urea which are not dissociated, there are substances like acetic acid and ammonia which are slightly dissociated; these are called weak electrolytes. Speaking generally, the electrolytes include all salts, strong acids, and bases; the weak electrolytes include the weak acids and weak bases; the non-electrolytes include organic substances which are not salts, acids, or bases.

Dissociation constant.—We can write the reaction for dissociation of the strong electrolyte hydrochloric acid as follows:

$$HCl = H + Cl$$

In dilute solution the reaction is complete from left to right; there is no undissociated HCl in solution. The reaction for the weak electrolyte acetic acid would be written as follows:

$$HC_2H_3O_2 \rightleftharpoons H + C_2H_3O_2$$

The sign of reversibility $\rightleftharpoons$, instead of equality, $=$, indicates that the reaction goes in both directions, that when equilibrium is reached, there is always some of all three of the reacting substances—undissociated acetic acid, hydrogen ion, and the acetic acid anion—present. The extent of dissociation—that is, the amount of each of the reacting substances present when equilibrium is reached—is determined by a law, the mass law, which all reversible reactions are found to obey, according to which the extent of reaction is proportional to the mass of the reacting substances. According to the mass law, the product of the concentration of the ions bears a constant ratio to the concentration of the undissociated substance, a relationship which is expressed as follows:

$$K = \frac{c_1 \times c_2}{C}$$

In the case of acetic acid, c_1 is the concentration of hydrogen ions, c_2 the concentration of the $C_2H_3O_2$ ions, and C the concentration of the undissociated acetic acid. K is a constant—in this case, 0.000018—the dissociation constant for acetic acid.

Dissociation of acetic acid.—Using 0.0001 (a rough approximation that will simplify presentation) for the dissociation constant of acetic acid, $\frac{c_1 \times c_2}{C} = 0.0001$, or $c_1 \times c_2 = 0.0001\ C$. That is to say, in a dilute solution of acetic acid, the product of the concentration of the hydrogen ions and the acetic acid anion is one ten-thousandth that of the concentration of the undissociated acetic acid. In a normal solution of acetic acid, $C = 1$, and $c_1 \times c_2 = 0.0001$; if the solution contains no other acid and no acetate, $c_1 = c_2 = 0.01$. According to this calculation, a normal solution of acetic acid is about one per cent dissociated. (The correct figure is $\sqrt{0.000018}$, or about 0.4 per cent.)

Diminution of dissociation.—In the equation for acetic acid, $K=\frac{c_1 \times c_2}{C}$, or $c_1 \times c_2 = KC$, C, the undissociated acetic acid, is so nearly constant (it varies from 99.5 to 100 per cent of the total acetic acid in a dilute solution) that we may call it constant, and write $c_1 \times c_2 = K_1$, where $K_1 = KC$. If now, in a solution of acetic acid, we increase c_2 by adding $C_2 H_3 O_2$ anion in the form of the completely dissociated sodium acetate, then, in order to maintain K_1 constant, c_1 must decrease. The following reaction takes place:

$$C_2 H_3 O_2 + H = HC_2 H_3 O_2$$

In other words, the addition to an acid solution of a salt of the same acid diminishes the dissociation of the acid, diminishes the "acidity," diminishes the hydrogen ion concentration.

Calculation of hydrogen ion concentration.—The equation $c_1 \times c_2 = KC$ may be written $c_1 = K \frac{C}{c_2}$. In a solution containing a weak acid and a salt of the acid, C, the concentration of the undissociated acid, is practically the total concentration of the acid, dissociated and undissociated; and, since all of the salt is dissociated and very little of the acid, c_2, the concentration of the anion, is practically the concentration of the salt. We may, therefore, write—

$$\text{concentration of hydrogen ions} = K \frac{\text{concentration of acid}}{\text{concentration of salt}}.$$

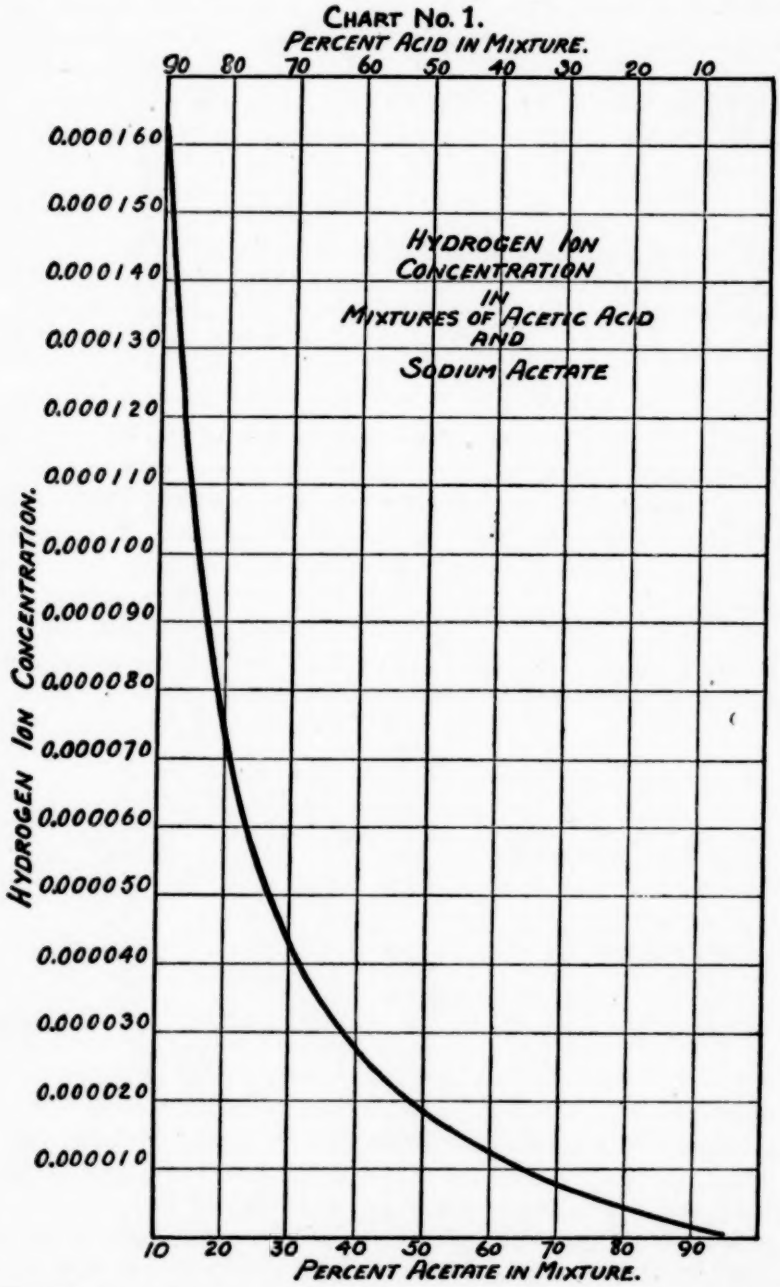
Table I and Chart No. 1 show the hydrogen ion concentration in mixtures of acetic acid and sodium acetate.

TABLE I.

c_2 Parts acetate in 10	C Parts acetic acid in 10	Hydrogen ion concentration. $K\frac{C}{c_2} = c_1$
1	9	$0.000018 \times \frac{9}{1} = 0.000162$
2	8	$0.000018 \times \frac{8}{2} = 0.000072$
3	7	$0.000018 \times \frac{7}{3} = 0.000042$
4	6	$0.000018 \times \frac{6}{4} = 0.000027$
5	5	$0.000018 \times \frac{5}{5} = 0.000018$
6	4	$0.000018 \times \frac{4}{6} = 0.000012$
7	3	$0.000018 \times \frac{3}{7} = 0.000008$
8	2	$0.000018 \times \frac{2}{8} = 0.000004$
9	1	$0.000018 \times \frac{1}{9} = 0.000002$

The figures indicate how great a reduction in the acidity of a weak acid results from addition of comparatively small amounts of a salt of the same acid; an increase of the proportion of salt from ten up to 20 per cent in the mixture diminishes the acidity by half, and a further increase of ten per cent reduces the acidity again by a half. The figures show, further, that the hydrogen ion concentration in a solution containing a mixture of weak acid and salt of the same acid in

equal proportions is numerically equivalent to the dissociation constant; when $C = c_2$, then the equation $c_1 = K\frac{C}{c_2}$ becomes $c_1 = K$.



Dissociation of water.—Water dissociates to a very slight extent, so slight that C_{HOH} in the equation $C_H \times C_{OH} = KC_{HOH}$ may be regarded

as a constant, and we may write $C_H \times C_{OH} = K$. K is 0.00000000000001 or 10^{-14}. In pure water, $C_H = C_{OH} = 10^{-7}$. The degree of dissociation of water is so slight that for most practical purposes water may be regarded as undissociated. It is because water dissociates so little that acids and bases react in solution to form salts. Before the publication of the dissociation theory, the cause of the reaction $HCl + NaOH = NaCl + HOH$ was seen in the attraction or affinity between sodium and chlorine. Now we write the reaction—

$$Na + OH + H + Cl = HOH + Na + Cl.$$

What really happens is that the hydrogen ions from the acids and the hydroxyl ions from the base unite to form undissociated HOH; the sodium and chloride ions remain unaffected. In the case of a weak, slightly dissociated acid like acetic acid, the result is the same; as fast as the free hydrogen ions disappear to form undissociated HOH, more hydrogen ions are set free from the undissociated weak acid, until finally all the acid, dissociated and undissociated, has been converted to salt. Titration with alkali measures the total concentration of acid, dissociated and undissociated; it does not measure the hydrogen ion concentration.

p_H.—The hydrogen ion concentration of a solution containing equal parts acetic acid and acetate can be expressed in the following different ways: $0.000018 = \frac{18}{1{,}000{,}000} = \frac{1.8}{100{,}000} = \frac{1.8}{10^5} = 1.8 \times \frac{1}{10^5} = 1.8 \times 10^{-5} = 10^{0.25} \times 10^{-5} = 10^{-4.75}$. The simplest of these figures for defining the hydrogen ion concentration is the negative logarithm 4.75; and so it is everywhere used for this purpose instead of the more cumbersome figures. It is referred to as p_H. p_H is likewise more convenient to plot on charts than C_H. The change in C_H from normal acid to pure water runs from 1.0 to 0.0000001. On a scale where the change from 0.0000001 to 0.000001 would be one inch, the change from 0.0000001 to 1.0 would be one million inches or several miles. The corresponding variation in p_H runs from 7 to 0, and can be plotted on a scale seven inches long. p_H can be used to define the alkalinity as well as acidity. In a $\frac{N}{100}$ alkaline solution, for example, $C_{OH} = \frac{1}{100}$ or 10^{-2}. Then, since $C_H \times 10^{-2} = 10^{-14}$, $C_H = 10^{-12}$, and $p_H = 12$. Chart No. 2 shows the p_H value for mixtures of acetic acid and sodium acetate. (p_H in this case is the logarithm of c_1, Table 1.)

4. BUFFER MIXTURES.

Definition.—From Chart No. 2 it will be seen that a solution containing acetic acid and sodium acetate in any except extreme proportions has a fairly constant acidity. With equal parts acid

and salt, p_H is 4.75; with three parts acid and seven parts salt p_H is 5.1; with seven parts acid and three parts salt, p_H is 4.4. Now if we add to a mixture containing equal parts acid and salt, alkali enough to convert some of the acid to salt, we merely change the proportion of acid and salt from 5:5, let us say, to 3:7, a change which does not greatly affect p_H. If we add a strong, completely dissociated acid like hydrochloric acid, the highly concentrated hydrogen ions from this acid will unite with the acetic acid anions from the sodium acetate to form undissociated acetic acid:

$$H + Cl + Na + C_2H_3O_2 = HC_2H_3O_2 + Na + Cl$$

The end result will be a decrease in the sodium acetate, and an increase in the acetic acid, the proportion of salt to acid changing from 5:5, let us say, to 3:7—a change which does not greatly affect p_H. Mixtures of this kind (mixtures of a weak acid and a salt of the acid) to which either alkali or acid may be added in moderate quantities with but little change in p_H are called buffer mixtures.

Experiments on buffer mixtures—Acetic acid and sodium acetate.—Observe the color imparted to dilute acid, to distilled water and to dilute alkali by two drops of a 1–2 per cent alcoholic solution of dimethylamidoazobenzol, and by two drops of 1–2 per cent alcoholic solution of phenolphthalein. Add both indicators together to 10 c. c. of water, and determine how many drops of $\frac{N}{10}$ HCl is required to turn this neutral solution red (acid); how many drops of $\frac{N}{10}$ alkali is required to turns this neutral solution red (alkaline). Now mix together 5 c. c. $\frac{N}{10}$ acetate acid and 5 c. c. $\frac{N}{10}$ sodium acetate solution, add two drops of each of these indicators and determine how much $\frac{N}{10}$ hydrochloric acid can be added before this neutral solution becomes acid. How much $\frac{N}{10}$ sodium hydroxide is required to turn such a mixture alkaline.

Important buffer mixtures.—Two buffer mixtures of great practical importance in physiology are the phosphate pair, $NaH_2PO_4 : Na_2HPO_4$ and the carbonate pair, $H_2CO_3 : NaHCO_3$.

NaH_2PO_4.—Phosphoric acid, H_3PO_4, has three hydrogens replaceable by base. H_3PO_4 is a strong acid dissociated in solution as follows:

$$H_3PO_4 = H + H_2PO_4.$$

The anion H_2PO_4 is a very weak acid, far weaker than acetic acid, which dissociates to a very slight extent as follows:

$$H_2PO_4 \rightleftharpoons H + HPO_4;$$

Its dissociation constant is about 10^{-7}. HPO_4 does not further dissociate. The salt NaH_2PO_4 dissociates as follows:

$$NaH_2PO_4 = Na + H_2PO_4 \text{ (almost completely)} \quad (1)$$

and then the anion further dissociates as follows:

$$H_2PO_4 \rightleftharpoons H + HPO_4 \text{ (to a very slight extent)} \quad (2)$$

As a result of this second reaction a solution of NaH_2PO_4 reacts weakly acid.

Na_2HPO_4.—This salt dissociates in solution as follows:

$$Na_2HPO_4 = Na_2 + HPO_4 \quad (3)$$

Now the dissociation constant of H_2PO_4 is so small, so near that of pure water, that even the small quantities of hydrogen ion resulting from the dissociation of water can not remain in the presence of the large amount of HPO_4 ion coming from Na_2HPO_4. The following reaction, accordingly, takes place to a slight extent:

$$H + OH + HPO_4 = H_2PO_4 + OH \quad (4)$$

leaving a slight excess of the alkaline hydroxyl ions in the solution.

The NaH_2PO_4 : Na_2HPO_4 mixture.—Reactions (2) and (4) are reversible reactions; addition of any of the members appearing on the right hand side of the equation makes the reactions run from right to left. Addition of even a small quantity of Na_2HPO_4, which gives much HPO_4, to a solution of NaH_2PO_4 makes reaction (2) run from right to left; that is to say, it diminishes the acidity of NaH_2PO_4 to practically the neutral point. Similarly, addition of even a small amount of NaH_2PO_4, which gives much H_2PO_4, to a solution of Na_2HPO_4 makes reaction (4) run from right to left; that is, it diminishes the alkalinity of Na_2HPO_4 to practically the neutral point. Accordingly, a solution containing a mixture of NaH_2PO_4 and Na_2HPO_4 in any proportions except extreme ones is almost precisely neutral.

Na_2HPO_4 : NaH_2PO_4 as a buffer mixture.—If, now, to a solution containing, say, equal parts NaH_2PO_4 and Na_2HPO_4 we add HCl, some of the alkaline phosphate is converted to acid phosphate:

$$Na_2HPO_4 + HCl = NaH_2PO_4 + NaCl.$$

If instead of HCl we add NaOH, some of the acid phosphate is converted to alkaline phosphate:

$$NaH_2PO_4 + NaOH = Na_2HPO_4 + H_2O.$$

The end result of adding either acid or alkali to such a mixture is merely a change in the proportion of the two salts present; and since a mixture of the two salts in any except extreme proportions is almost precisely neutral, these two salts form a buffer mixture.

H_2CO_3 : $NaHCO_3$ buffer mixture.—The weak acid H_2CO_3 dissociates to a slight extent as follows:

$$H_2CO_3 \rightleftharpoons H + HCO_3 \text{ (dissociation constant about } 10^{-7}) \quad (5).$$

The salt $NaHCO_3$ dissociates completely as follows:

$$NaHCO_3 = Na + HCO_3 \quad (6).$$

Even the slight quantity of hydrogen ions from the dissociation of water reacts with the HCO_3:

$$H + OH + HCO_3 = H_2CO_3 + OH \quad (7).$$

H_2CO_3 is, therefore, a very weak acid (reaction 5); and $NaHCO_3$ is a very weak alkali (reaction 7). But addition of even a very small amount of $NaHCO_3$ to a solution of carbonic acid diminishes the acidity to practically the neutral point (reaction 5 goes from right to left) and addition of even a little H_2CO_3 to a solution of $NaHCO_3$ diminishes its alkalinity to practically the neutral point (reaction 7 goes from right to left). In other words, a mixture of carbonic acid and sodium bicarbonate in any except extreme proportions is almost precisely neutral. Addition of acid to such a mixture changes some of the bicarbonate to acid:

$$NaHCO_3 + HCl = NaCl + H_2CO_3;$$

and addition of alkali changes some of the acid to bicarbonate

$$H_2CO_3 + NaOH = NaHCO_3 + H_2O.$$

The change in p_H resulting from the change in relative amounts of acid and salt is very little.

p_H of these buffer mixtures.—In the equation $\frac{C_H \times C_{HPO_4}}{C_{H_2PO_4}} = K$, K is 1.55×10^{-7}. Then $C_H = 1.55 \times 10^{-7} \times \frac{C_{H_2PO_4}}{C_{HPO_4}}$. In a mixture of these two phosphates the concentration of H_2PO_4 is practically that of NaH_2PO_4, and the concentration of HPO_4 practically that of the Na_2HPO_4. So we may write:

$$C_H = 1.55 \times 10^{-7} \times \frac{\text{concentration of acid phosphate}}{\text{concentration of alkaline phosphate}}.$$

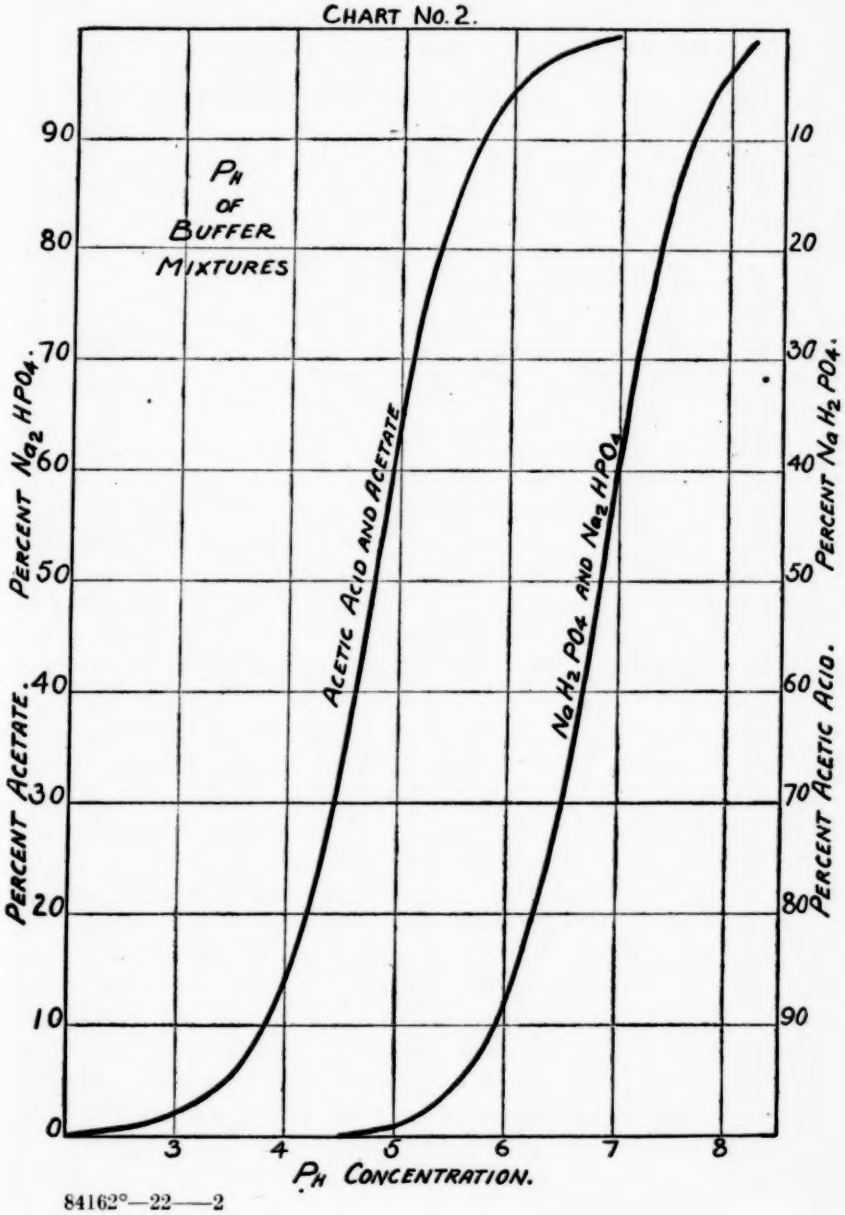
Table II and Chart 2 show the hydrogen ion concentration of mixtures of the two phosphates.

TABLE II.—*p_H of mixture of Na_2HPO_4 and NaH_2PO_4.*

Percentage NaH_2PO_4 in mixture.	Percentage Na_2HPO_4 in mixture.	C_H.	p_H.
10	90	0.17×10^{-7}	7.77
20	80	0.38×10^{-7}	7.42
30	70	0.66×10^{-7}	7.18
40	60	1.03×10^{-7}	6.99
50	50	1.55×10^{-7}	6.81
60	40	2.32×10^{-7}	6.63
70	30	3.13×10^{-7}	6.50
80	20	6.2×10^{-7}	6.21
90	10	14×10^{-7}	5.85

From Table II and Chart 2 it will be seen that p_H in mixtures of alkaline and acid phosphate lies between the limits 6 and 8; this means a variation in reaction of only from $\frac{N}{1,000,000}$ acid to $\frac{N}{1,000,000}$ alkali. The dissociation constant for H_2CO_3 is practically the same as for H_2PO_4, so that Table II and Chart 2 are practically correct for the H_2CO_3: $NaHCO_3$ buffer mixture.

CHART NO. 2.



84162°—22——2

Their physiological importance.—These two pairs of buffer mixtures occur in blood and tissue fluids and maintain the reaction of the body fluids precisely neutral. The end products of metabolism are more acid than alkaline, so that there would be a tendency to accumulation of the acid members of these buffer mixtures were this tendency not combated by the continuous excretion of the excess of these acid members, the acid phosphate through the kidneys, the carbonic acid through the lungs.

5. COLORIMETRIC DETERMINATION OF HYDROGEN ION CONCENTRATION.

Nature of indicators.—The indicators used in determining the reaction of a solution are weak organic acids whose anion has a different color in solution from that of the undissociated acid. Methyl orange, for example, is pink in acid solution and yellow in alkaline solution. In alkaline solution the indicator is all present as salt; the salt is completely dissociated, and the anion gives its characteristic yellow color to the solution. In acid solution, the excess of hydrogen ions diminishes the dissociation of the weakly acid indicator just as hydrochloric acid diminishes the dissociation of acetic acid; and the undissociated acid gives its characteristic pink color to the solution.

p_H and color of indicator.—The p_H of mixtures of the pink undissociated acid methyl orange and the yellow salt of methyl orange varies slightly about a mean just as does the p_H of buffer mixtures; the mean value, as in the case of buffer mixtures, is numerically equivalent to the dissociation constant. The form of the curve for p_H is similar to that of the curves for p_H in mixtures of acetic acid and sodium acetate and other buffers. Since, now, mixtures of the acid methyl orange and the methyl orange salt in varying proportions correspond to definite hydrogen ion concentrations; and since these mixtures show varying shades of orange likewise corresponding to the proportions of the pink acid solution and the yellow salt solution, each shade of orange corresponds to a definite hydrogen ion concentration. And this fact gives the basis for a colorimetric method of determining hydrogen ion concentration.

Indicators useful in bacteriology.—Any one indicator changes color over only a very small range of hydrogen ion concentration; and any one buffer mixture acts as such over only a very small range of hydrogen ion concentration. To cover a large range would require, therefore, a considerable number of indicators and several pairs of buffer mixtures. In bacteriological work we are interested chiefly in values for p_H close to neutrality ($p_H = 7$), a region which is covered by the phosphate buffer mixture ($p_H = 5.8$ to 8.2). There are several indicators for this region; brom cresol purple, which shows changes from yellow to purple between p_H 5.2 and p_H 6.8, and phenol

red, which shows color changes from yellow to red between p_H 6.8 and p_H 8.4, are among the best.

6. TECHNIQUE OF THE DETERMINATION.

The standard solutions.—Tenth molecular solutions of KH_2PO_4 (13.62 grams potassium phosphate, monobasic, anhydrous, Merck's reagent, to the liter) and Na_2HPO_4 (14.21 grams sodium phosphate, anhydrous, Merck's reagent, per liter) are convenient strengths for the stock solutions. From these the following twelve standard solutions are prepared:

TABLE III.—*p_H of phosphate solutions.*

C. c. $\frac{M}{10}$ Na_2HPO_4	C. c. $\frac{M}{10}$ KH_2PO_4	p_H
8	92	5.8
12	88	6.0
19	81	6.2
27	73	6.4
37	63	6.6
49	51	6.8
61	39	7.0
73	27	7.2
82	18	7.4
89	11	7.6
94	6	7.8
97	3	8.0

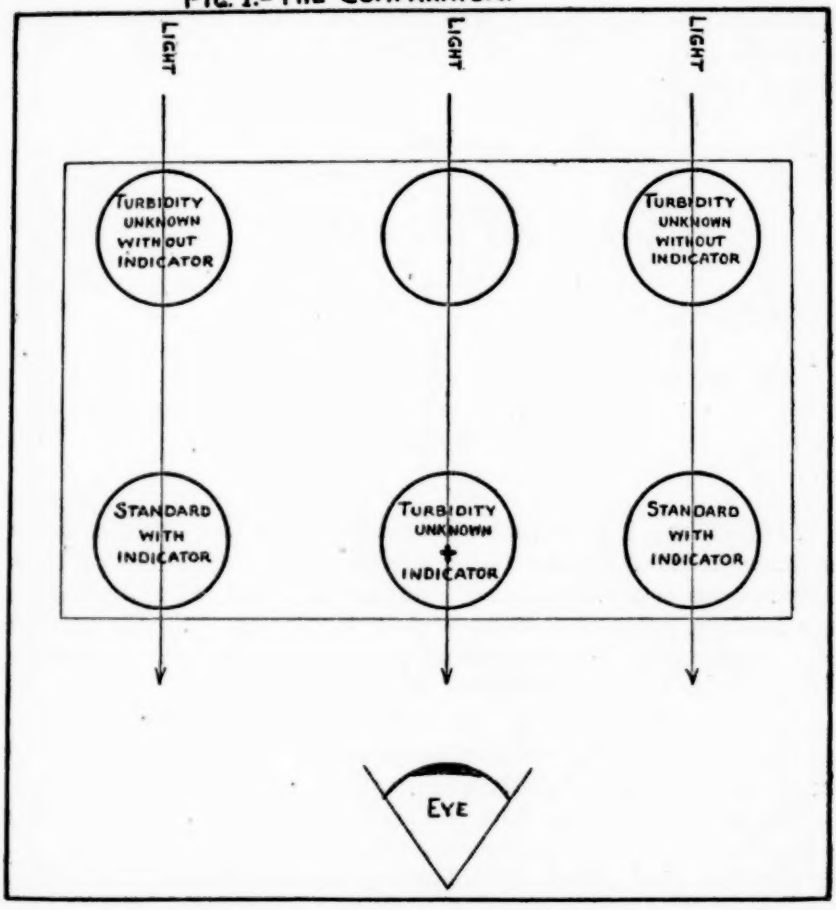
The reading.—To determine the hydrogen ion cencentration of an unknown solution coming within the limits of $p_H = 6.8$ to 8.2, add to it five drops of a 0.03 per cent solution of phenol red and compare the resulting color with that obtained by adding the same amount of indicator to 5 c. c. of each of the standard phosphate solutions diluted with 10 c. c. of water. Between the limits $p_H = 5.8$ to 6.8 the indicator brom cresol purple—five drops of a saturated solution—should be used. (The standard solutions with indicator in them will keep several weeks if tightly stoppered.)

The comparator.—The color comparison can be made in large clear glass test tubes. To overcome the effect of turbidity, such as occurs in bacteriological media, the unknown solution is diluted to a moderate extent, say to three times its volume, and the test tubes are arranged in a device called a comparator. The device consists of a block of wood containing 6 perpendicular holes large enough to carry the test tubes. Three other holes are then bored horizontally through the block from side to side, so that one can look right through each pair of test tubes in series. When the solutions are arranged as indicated in Figure 1, in each case the light reaching the eye has passed through solution containing indicator and solution containing turbidity. In the case of the unknown, one solution contains both

turbidity and indicator; in the case of the standards the turbidity and indicator are in separate solutions.

Adjusting reaction of culture media.—Most bacteria grow best in media whose p_H lies between 7.2 and 7.6. The optimum for typhoid and paratyphoid is near the lower of these two limits; that for pneumococcus, streptococcus, and menigococcus, nearer the upper of

FIG. 1:- THE COMPARATOR.



these limits. To adjust media to any desired hydrogen ion concentration, $\frac{N}{10}$ alkali is added drop by drop to five c. c. of the somewhat diluted media containing indicator until, as shown by comparison with the standards, the desired hydrogen ion concentration is reached. From the amount of alkali required for five c. c., the amount needed for the whole batch of media can then be calculated. Sterilization of the media shifts the p_H about 0.2 toward the acid side. Allowance should be made for this.

COURT DECISION RELATING TO QUARANTINE.

The Supreme Court of California has decided [1] that by virtue of statutory authority "the State board of health has power to order the quarantine of persons who have come in contact with cases and carriers of contagious diseases," and that the unauthorized removal of a quarantine placard affixed to premises by order of the State board of health is "a misdemeanor under the Public Health Act."

TYPHOID FEVER IN THE UNITED STATES.

CASE RATES, JANUARY TO NOVEMBER, 1921 AND 1920, AND MEDIANS FOR THE YEARS 1913 TO 1920.

The accompanying table shows the number of reported cases of typhoid fever per 1,000 population by quarters, from January to June, and by months, from July to November, 1921, compared with the same periods during 1920, and the medians for 1913 to 1920, inclusive.

The median was ascertained by arraying the figures so that the greatest number was first, the next smaller number was second, and so on to the smallest number, which was placed last. The middle number of the array was then selected as the median. Data were not available for all the States for the full eight years. As many years as possible were included for each State, but no year earlier than 1913 was used. The first column shows the number of years for which figures were obtained for each State.

The estimated populations on which the rates were computed are as follows:

	Number of States.	Estimated population.
1921	40	88,475,824
1920	39	85,189,366
Median, 1913–1920	38	83,144,829

For comparison the death rates per 100,000 population in the registration area for deaths are shown in the following table:

Typhoid fever death rates per 100,000 population in registration area for deaths, 1913–1920, inclusive.

1920	7.8	1915	12.4
1919	9.2	1914	15.5
1918	12.6	1913	17.9
1917	13.5		
1916	13.3	Median	12.9

[1] *Ex parte* Culver, 202 Pac. 661.

Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1913 to 1920, inclusive.

Geographic division and State.	January, February, March.	April, May, June.	July.	August.	September.	October.	November.	11 months.
NEW ENGLAND.								
Maine:								
1921	0.29	0.20	0.34	0.85	0.76	0.76	0.22	0.40
1920	.37	.63	.42	.55	.94	1.45	.67	.64
Median (5 years)	.18	.19	.35	.42	.30	.50	.52	.29
Vermont:								
1921	.48	.32	.17	.41	.55	.78	.27	.42
1920	.34	.40	.34	.51	.95	.85	.51	.49
Median (7 years)	.35	.42	.31	.58	.95	.71	.37	.48
Massachusetts:								
1921	.14	.28	.19	.35	.39	.32	.18	.24
1920	.12	.16	.32	.36	.62	.39	.26	.25
Median (8 years)	.21	.23	.39	.77	.94	.68	.38	.41
Rhode Island:								
1921	.08	.03	.65	.41	.35	.18	.04	.18
1920	.02	.08	.10	.18	.32	.20	.10	.11
Median (6 years)	.07	.16	.27	.43	.45	.37	.22	.22
Connecticut:								
1921	.11	.30	.45	.81	.69	.41	.23	.35
1920	.07	.15	.17	.54	1.04	.53	.39	.30
Median (8 years)	.13	.23	.43	.86	1.24	.67	.54	.44
MIDDLE ATLANTIC.								
New York:								
1921	.17	.14	.23	.50	.68	.59	.34	.30
1920	.09	.18	.20	.45	.66	.44	.31	.26
Median (8 years)	.25	.26	.42	.70	.99	.64	.39	.42
New Jersey:								
1921	.10	.13	.26	1.25	.94	.63	.30	.37
1920	.09	.13	.15	.35	.47	.34	.30	.21
Median (8 years)	.19	.20	.39	.76	1.07	.63	.37	.40
Pennsylvania:								
1921	.16	.17	.71	1.56	1.33	.99	.43	.55
1920	.17	.22	.37	.45	.68	.63	.37	.33
Median (8 years)	.48	.44	.59	1.02	1.70	1.29	.67	.73
EAST NORTH CENTRAL.								
Ohio:								
1921	.17	.30	.93	1.98	1.54	1.58	.63	.74
1920	.14	.26	.39	.69	1.03	1.42	1.09	.53
Median (7 years)	.24	.38	.61	1.13	1.56	1.33	.71	.68
Indiana:								
1921	.16	.13	.49	.78	.99	.64	.32	.37
1920	.10	.30	.22	.28	.33	.56	.45	.28
Median (8 years)	.34	.32	.59	1.27	1.25	1.03	.52	.60
Illinois:								
1921	.15	.18	.60	.77	.73	.70	.34	.37
1920	.18	.22	.31	.35	.49	.44	.33	.28
Median (6 years)	.21	.21	.38	.62	.84	.43	.34	.35
Michigan:								
1921	.17	.27	.31	1.32	1.11	.87	.58	.50
1920	.16	.37	.35	.52	.53	.54	.72	.39
Median (8 years)	.36	.33	.48	.60	.82	.73	.46	.47
Wisconsin:								
1921	.16	.10	.09	.28	.26	.39	.36	.20
1920	.07	.11	.14	.13	.17	.17	.18	.12
Median (8 years)	.16	.17	.14	.18	.20	.20	.20	.17
WEST NORTH CENTRAL.								
Minnesota:								
1921	.31	.28	.42	.21	.32	.37	.26	.31
1920	.16	.17	.46	.45	.39	.55	.30	.29
Median (8 years)	.29	.23	.41	.53	.57	.58	.39	.37
North Dakota:								
1921	.14	.18	.07	.15	.57	.09	.05	.17
1920	.23	.09	.30	.44	.68	.81	.52	.34
Median (4 years)	.14	.09	.19	.39	.58	.60	.41	.26
South Dakota:								
1921	.07	.08	.07	.24	.30	.28	.06	.13
1920	.11	.06	.19	.19	.09	.28	.13	.13
Median (6 years)	.07	.08	.13	.25	.39	.37	.25	.17
Nebraska:								
1921	.09	.08	.26	.26	.27	.37	.09	.16
1920	.04	.15	.06	.11	.44	.31	.10	.14
Median (1918-1920)	.04	.06	.06	.11	.45	.28	.10	.12

Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1913 to 1920, inclusive—Continued.

Geographic division and State.	January, February, March.	April, May, June.	July.	August.	September.	October.	November.	11 months.
WEST NORTH CENTRAL—continued.								
Kansas:								
1921	0.13	0.26	1.27	1.83	1.01	0.75	0.26	0.57
1920	.18	.37	.91	1.60	1.77	1.13	.51	.69
Median (8 years)	.22	.30	1.41	1.93	1.94	1.47	1.09	.85
SOUTH ATLANTIC.								
Delaware:								
1921	.16	.28	.69	1.06	1.22	1.49	.53	.57
1920	.23	.34	.21	.43	.75	1.12	.48	.43
Median [1]								
Maryland:								
1921	.31	.45	1.71	3.10	2.26	1.51	.90	1.16
1920	.23	.28	.86	1.09	1.89	1.39	1.00	.71
Median (6 years)	.56	.65	1.51	3.47	4.33	2.45	1.30	1.52
District of Columbia:								
1921	.33	.19	.79	.93	.63	.45	.13	.41
1920	.07	.18	.38	.51	.92	.62	.41	.33
Median (8 years)	.26	.36	.79	1.81	1.67	1.11	.70	.72
Virginia:								
1921	.36	.83	3.33	2.77	1.64	1.66	.62	1.23
1920	.17	.40	1.93	1.82	1.87	1.12	.71	.83
Median (8 years)	.40	.88	2.85	4.31	3.41	2.04	1.22	1.60
West Virginia:								
1921	.49	.36	1.81	2.37	2.89	2.35	.94	1.17
1920	.57	.56	1.10	.88	.93	1.12	.64	.73
Median (4 years)	.36	.65	1.39	2.20	1.91	1.23	.82	.96
North Carolina:								
1921	.15	.78	2.25	2.03	1.19	.69	.37	.85
1920	.09	.38	1.83	2.03	1.77	.97	.44	.77
Median (1918–1920)	.13	.55	3.50	2.38	2.51	.98	.45	1.08
South Carolina:								
1921	.10	.32	87	.46	.52	.18	.07	.30
1920	.03	.32	.72	.77	.74	.29	.28	.35
Median (8 years)	.08	.59	1.10	1.04	.77	.39	.29	.51
Florida:								
1921	.74	.81	.72	1.16	.63	.43	.35	.72
1920	.55	.62	.74	.72	.37	.48	.25	.55
Median (1918–1920)	.35	.62	.75	.75	.38	.49	.30	.51
EAST SOUTH CENTRAL.								
Alabama:								
1921	.31	.47	.96	1.41	.87	.65	.40	.60
1920	.13	.32	.82	1.26	.97	.40	.33	.46
Median (7 years)	.25	.71	1.68	2.17	1.17	.73	.39	.82
Mississippi:								
1921	.65	1.35	3.12	2.23	2.02	1.93	1.46	1.52
1920	.57	1.30	2.96	3.51	2.62	1.42	1.01	1.56
Median (7 years)	1.14	2.07	5.88	6.72	4.75	3.04	2.24	2.93
WEST SOUTH CENTRAL.								
Arkansas:								
1921	.24	.23	1.52	1.79	.87	.55	.53	.61
1920	.19	.15	.76	1.08	1.27	1.13	.78	.55
Median (4 years)	.14	.16	.70	.77	.76	.78	.56	.41
Louisiana:								
1921	.27	.54	.76	.71	.74	.57	.44	.51
1920	.23	.34	.68	1.27	.77	.35	.29	.46
Median (7 years)	.22	.82	1.16	1.04	.83	.68	.48	.67
Oklahoma:								
1921	.05	.27	.95	.77	.51	.28	.22	.33
1920 [1]								
Median (1913, 1915, 1917)	.32	.41	1.59	1.57	1.71	1.54	1.16	.89
MOUNTAIN.								
Montana:								
1921	.14	.22	.85	.92	.52	.25	.10	.34
1920	.16	.33	.51	.49	.86	.60	.95	.45
Median (7 years)	40	.47	.67	1.21	1.45	1.05	.88	.71

[1] Not available.

Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1913 to 1920, inclusive—Continued.

Geographic division and State.	January, February, March.	April, May, June.	July.	August.	September.	October.	November.	11 months.
MOUNTAIN—continued.								
Idaho:								
1921	0.25	0.12	0.29	0.35	0.51	0.29	0.11	0.24
1920	.06	.36	.22	.63	.30	.22	.80	.31
Average (1913, 1920)	.04	.24	.30	.71	.98	.44	.86	.37
Wyoming:								
1921	.46	.30	.77	1.01	.48	.24	.42	.47
1920	.24	.33	.43	.91	1.10	.73	.30	.47
Median (8 years)	.09	.20	.33	.59	.79	.46	.20	.29
Colorado:								
1921	.13	.38	.35	1.10	1.16	.99	.81	.51
1920	.06	.15	.38	1.13	1.31	.84	.30	.42
Median (6 years)	.11	.18	.60	1.05	1.29	.94	.39	.46
New Mexico:								
1921	.22	.30	.89	.85	2.07	2.43	1.58	.85
1920	.30	.56	1.39	.86	2.12	1.76	1.69	.95
Median [1]								
Arizona:								
1921	.01	.05	.20	.44	.31	.71	.31	.19
1920	.02	.11	1.09	.46	.42	.53	.14	.28
Median (1916, 1918, 1920)	.04	.13	.92	.27	.38	.54	.15	.25
PACIFIC.								
Washington:								
1921	.16	.26	.56	.59	.59	.58	.28	.35
1920	.18	.15	.34	.66	.87	.64	.39	.35
Median (8 years)	.29	.26	.53	.95	1.25	.90	.45	.52
Oregon:								
1921	.05	.05	.13	.28	.36	.40	.16	.15
1920	.08	.07	.06	.11	.36	.33	.21	.14
Median (8 years)	.19	.15	.24	.40	.41	.54	.25	.26
California:								
1921	.15	.20	.36	.58	.38	.37	.25	.27
1920	.14	.32	.43	.54	.63	.44	.24	.33
Median (8 years)	.24	.31	.60	.62	.53	.51	.32	.38
TOTAL.								
Above States combined:								
1921	.19	.29	.76	1.10	.93	.77	.40	.49
1920	.16	.27	.53	.70	.82	.66	.46	.40
Median	.29	.39	.88	1.20	1.31	.91	.56	.63

[1] Not available.

DEATHS FROM INFLUENZA IN NINETY-SIX GREAT TOWNS OF ENGLAND AND WALES.

The following table shows the number of deaths attributed to influenza in Ninety-six Great Towns of England and Wales during the late fall and early winter months 1918–19 to 1921–22, inclusive. The figures are taken from the "Weekly Returns," issued by the Registrar General of England and Wales. The population of these towns collectively was given as 16,577,000 in 1917 and 18,555,000 in 1921.

Number of deaths from influenza in Ninety-six Great Towns of England and Wales.

Week ended—	Deaths.	Week ended—	Deaths.	Week ended—	Deaths.	Week ended—	Deaths.
1918		1919		1920		1921	
Oct. 12	647	Oct. 11	39	Oct. 9	33	Oct. 15	49
Oct. 19	1,887	Oct. 18	57	Oct. 16	34	Oct. 22	46
Oct. 26	4,482	Oct. 25	71	Oct. 23	30	Oct. 29	30
Nov. 2	7,412	Nov. 1	71	Oct. 30	35	Nov. 5	32
Nov. 9	7,559	Nov. 8	56	Nov. 6	29	Nov. 12	44
Nov. 16	5,916	Nov. 15	74	Nov. 13	42	Nov. 19	59
Nov. 23	5,106	Nov. 22	79	Nov. 20	60	Nov. 26	80
Nov. 30	5,119	Nov. 29	63	Nov. 27	69	Dec. 3	128
Dec. 7	3,574	Dec. 6	77	Dec. 4	65	Dec. 10	149
Dec. 14	1,885	Dec. 13	81	Dec. 11	61	Dec. 17	212
Dec. 21	1,015	Dec. 20	64	Dec. 18	75	Dec. 24	237
Dec. 28	581	Dec. 27	43	Dec. 25	81	Dec. 31	418
1919		1920		1921		1922	
Jan. 4	442	Jan. 3	52	Jan. 1	89	Jan. 7	897
Jan. 11	379	Jan. 10	73	Jan. 8	101	Jan. 14	1,240
Jan. 18	274	Jan. 17	62	Jan. 15	87	Jan. 21	1,404
Jan. 25	224	Jan. 24	85	Jan. 22	66	Jan. 28	1,419

A HIGH DEATH RATE IN SCOTLAND.

During the week ended January 21, 1922, 379 deaths from influenza were registered in sixteen principal towns of Scotland. The population of these towns collectively is given as 2,370,600. This gives an influenza death rate for the week, on an annual basis, of 8.33 per thousand population. One thousand nine hundred and thirty deaths from all causes were reported during the week, the crude death rate being 42.5 per thousand.

The Registrar General of Scotland, in the Weekly Return of Births, Deaths, and Marriages in the Principal Towns of Scotland (No. 3), says:

"The death rate for the week is 15.8 above that for the previous week, 22.3 above the mean of the rates for the three preceding weeks, and 25.9 above that for the corresponding week of last year. It is the highest Principal Town weekly death rate since that of the week ending 2nd March, 1895, which was 42.8. In the influenza epidemic of 1918–1919 the highest corresponding death rate was 40.0, and occurred in the week ending 1st March, 1919.

"In the individual towns the death rate ranged from 55.6 in Glasgow, 50.9 in Coatbridge, and 48.7 in Kirkcaldy, to 11.6 in Ayr, 17.3 in Motherwell and Wishaw, and 17.6 in Clydebank. In Dundee it was 41.1, in Edinburgh 35.1, in Falkirk 34.4, in Paisley 33.7, in Perth 33.2, in Hamilton 33.0, in Greenock 31.2, in Kilmarnock 29.0, in Dunfermline 25.4, and in Aberdeen 23.0. Compared with the returns for the previous week, the rate for Coatbridge shows an increase of 28.4, Kilmarnock of 24.6, Glasgow of 20.7, Hamilton of 19.8, Paisley of 17.7, Greenock of 16.5, and Edinburgh of 16.0. The only rate less than in the previous week is that for Perth, which was 33.2, or 17.4 less.

"Deaths from the principal epidemic diseases * * * numbered 150. They are 44 more than in the previous week, and are equal to an annual death rate from these causes of 3.3 per thousand. These deaths include 2 from enteric fever, 88 from measles, 4 from

scarlet fever, 34 from whooping cough, 13 from diphtheria, and 9 from the diarrhœas of childhood. Compared with the returns for the previous week, deaths from measles are 25 more, from whooping cough 14 more, from diphtheria 7 more, from scarlet fever 2 more, and from enteric fever 1 more, while those from the diarrhœas of childhood are 5 fewer.

"Deaths from influenza numbered 379. They are 227 more than in the previous week.

"Deaths from respiratory diseases numbered 681. They are 310 more than in the previous week.

"Deaths of children of less than one year old numbered 344, and those of persons of sixty-five and upward 497. The former are 133 more than in the previous week, and 203 more than in the corresponding week of last year. The latter are 152 more than in the previous week, and 271 more than in the corresponding week of last year."

DEATH RATES IN A GROUP OF INSURED PERSONS.

COMPARISON OF DEATH RATES FOR PRINCIPAL CAUSES, 1911–1921, AND NOVEMBER AND DECEMBER, 1921.

The following statements and tables are taken from the Statistical Bulletin of the Metropolitan Life Insurance Co. for January, 1922:

The death rate for 1921 among nearly 14,000,000 industrial policyholders of the company in the United States and Canada was 853.8 per 100,000, the lowest rate recorded in the history of the company. It is 13.7 per cent lower than the rate for 1920, namely, 989.4 per 100,000, which was the lowest recorded up to that time. The 1921 death rate is 31.9 per cent lower than that for 1911. Using absolute figures representing deaths instead of rates, the low mortality record for 1921 means that 18,661 fewer deaths occurred among the policyholders during 1921 than would have occurred had the rate for 1920 prevailed, and 54,942 fewer deaths than would have occurred if the 1911 rate had obtained.

The annual death rate in this selected group, from 1911 to 1920, has varied between 74 and 87 per cent of the rate in the registration area of the United States.

Marked declines in the mortality from tuberculosis, pneumonia, and influenza were, as in 1920, a large factor in the improvement noted in the total mortality. In a period of 11 years the death rate for tuberculosis has been almost cut in half. There were also declines in mortality from Bright's disease and organic heart disease.

Death rates per 100,000 lives exposed, for principal causes, 1911 to 1921.

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death.[1]	1921[1]	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911
All causes of death.	853.8	989.4	1,063.0	1,559.2	1,161.1	1,168.1	1,130.9	1,152.8	1,199.4	1,201.2	1,253.0
Typhoid fever	6.6	6.7	7.3	11.5	12.1	13.0	12.9	16.1	18.4	19.1	22.8
Communicable diseases of childhood	37.2	43.1	31.5	41.6	46.8	40.8	36.4	48.2	58.1	46.2	58.9
Measles	3.1	8.5	3.5	8.6	14.1	9.9	5.7	6.9	12.3	7.6	11.4
Scarlet fever	6.9	6.0	3.9	3.6	6.0	4.1	4.6	9.8	12.7	9.0	13.1
Whooping cough	3.9	6.6	3.2	10.1	5.1	5.8	4.7	5.8	5.9	5.1	7.1
Diphtheria	23.3	22.1	20.9	19.3	24.6	21.9	21.4	25.7	27.2	24.5	27.3
Influenza and pneumonia	75.1	159.5	214.1	542.2	135.4	138.1	119.5	111.6	118.4	116.2	131.2
Influenza	8.6	53.5	96.9	272.4	14.4	25.8	13.0	11.3	12.3	12.3	15.9
Pneumonia	66.5	106.1	117.2	269.8	121.0	114.3	106.5	100.3	106.1	103.9	115.3
Meningococcus meningitis	.9	1.0	1.3	2.8	3.5	1.5	1.3	1.5	1.7	3.0	(2)
Tuberculosis (all forms)	115.1	137.9	156.5	189.0	188.9	190.2	197.8	204.5	205.7	212.9	224.6
Tuberculosis of respiratory system	103.6	124.0	141.6	171.2	172.3	172.8	180.0	185.2	186.6	191.5	203.0
Cancer (all forms)	70.4	69.8	67.0	67.2	70.9	70.3	70.9	69.8	70.5	70.3	68.0
Diabetes mellitus	15.2	14.1	13.4	14.0	15.3	15.9	15.1	14.2	13.9	13.7	13.3
Cerebral hemorrhage, apoplexy	60.9	61.3	59.8	64.0	66.8	68.7	68.5	69.2	67.2	70.3	64.2
Diseases of heart	115.0	127.0	113.9	141.7	142.0	140.2	136.7	138.1	140.6	143.8	141.8
Diarrhea and enteritis	13.9	15.8	16.9	23.4	25.5	26.2	24.4	24.7	27.7	27.6	28.0
1 to 2 years	5.9	7.0	7.5	11.6	11.9	12.5	11.3	11.9	13.2	12.8	13.0
2 years and over	8.0	8.8	9.5	11.8	13.6	13.7	13.1	12.8	14.5	14.8	15.0
Chronic nephritis (Bright's disease)	66.7	70.8	73.5	86.8	95.7	99.0	95.7	95.4	96.0	99.4	95.0
Puerperal state (total)	19.5	23.0	20.0	27.4	18.2	17.6	18.0	19.8	20.0	18.4	19.8
Puerperal septicemia	8.3	8.6	6.7	7.3	7.5	7.2	7.2	8.4	9.1	8.0	8.8
Puerperal albuminuria and convulsions	4.8	5.0	4.8	4.9	5.1	5.0	4.8	5.1	5.3	4.8	4.7
Accidents of pregnancy	1.6	3.1	3.0	6.9	1.6	1.4	1.8	1.7	1.7	1.5	1.7
Total external causes	70.5	72.0	94.2	128.9	105.7	99.5	88.2	89.2	98.3	92.9	97.9
Suicides	7.5	6.1	6.8	7.6	9.3	9.8	12.2	12.3	13.5	12.4	13.3
Homicides	6.6	5.8	6.9	6.2	7.4	6.9	6.9	7.0	7.2	6.7	7.2
Accidents (total)	56.2	59.6	63.8	75.5	76.5	73.2	67.3	69.9	77.6	73.8	77.4
Accidental burns	6.5	8.1	8.1	9.0	8.9	8.8	8.6	8.4	9.0	9.1	8.8
Accidental drowning	8.0	6.7	8.6	9.4	8.7	9.7	11.9	10.0	12.1	10.2	10.2
Accidental traumatism, by fall	7.0	7.3	8.0	10.4	11.9	13.1	11.9	12.6	13.7	12.7	13.2
Accidental traumatism, by machines	1.0	1.7	1.6	2.4	2.0	1.7	1.4	1.5	2.0	1.7	1.8
Railroad accidents	3.8	5.2	5.7	7.8	8.5	7.9	7.4	7.5	9.0	9.2	9.5
Automobile accidents	11.9	11.1	10.7	10.3	9.7	7.4	5.4	4.8	4.1	3.0	2.3
All other accidents	18.0	19.5	21.2	26.1	26.8	24.6	20.7	25.1	27.7	27.9	31.6
War deaths	.1	.5	16.6	39.7	13.5	9.6	1.8	.....	.....	.....	.....
Other diseases and conditions	187.0	197.4	193.5	218.7	233.2	247.1	245.5	250.5	261.9	267.4	287.5

[1] Returns for 1921 were classified in accordance with the requirements of the third decennial revision of the International List of Causes of Sickness and Death. Nineteen hundred and twenty-one death rates based upon provisional estimate of lives exposed to risk.
[2] Not available.

The death rate for December, 1921, shows a slight increase over that for November, the increase being due to higher mortality from respiratory conditions and important organic diseases. The rate was lower, however, for December, 1921, than for the same month of 1920.

Death rates (annual basis) for principal causes per 100,000 lives exposed, November and December, 1921, and December and year, 1920.

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death.	Death rate per 100,000 lives exposed.			
	December, 1921.	November, 1921.	December, 1920.	Year 1920.
Total, all causes	885.9	836.7	948.8	989.4
Typhoid fever	6.0	8.7	5.0	6.7
Measles	1.3	.6	3.5	8.5
Scarlet fever	5.5	5.5	8.8	6.0
Whooping cough	1.1	1.6	4.4	6.6
Diphtheria	31.3	30.7	35.1	22.1
Influenza	7.2	5.2	8.6	53.5
Tuberculosis (all forms)	105.6	95.3	125.3	137.9
Cancer	76.6	70.1	76.8	69.8
Meningitis (all forms)	5.7	5.3	4.6	5.2
Cerebral hemorrhage	70.6	62.6	66.1	61.3
Organic diseases of heart	124.9	118.4	122.1	117.0
Pneumonia (all forms)	76.5	61.1	86.7	106.1
Other respiratory diseases	16.2	15.1	17.3	18.2
Diarrhea and enteritis	7.1	13.2	9.7	15.8
Bright's disease	71.9	69.1	75.3	70.8
Puerperal state	17.0	16.3	17.7	23.0
Suicides	6.9	5.9	5.7	6.1
Homicides	8.4	6.3	6.9	5.8
Other external causes (excluding suicides and homicides)	50.2	51.4	58.0	60.1
Traumatism by automobile	12.5	13.6	10.3	11.1
All other causes	196.1	194.1	211.4	188.9

DEATHS DURING WEEK ENDED FEB. 4, 1922.

Summary of information received by telegraph from industrial insurance companies for week ended Feb. 4, 1922, and corresponding week, 1921. (From the Weekly Health Index, Feb. 7, 1922, issued by the Bureau of the Census, Department of Commerce.)

	Week ended Feb. 4, 1922.	Corresponding week, 1921.
Policies in force	48,750,583	45,778,701
Number of death claims	9,346	8,621
Death claims per 1,000 policies in force, annual rate	10.0	9.8

Deaths from all causes in certain large cities of the United States during the week ended Feb. 4, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, Feb. 7, 1922, issued by the Bureau of the Census, Department of Commerce.)

City.	Estimated population July 1, 1921.	Week ended Feb. 4, 1922.		Annual death rate per 1,000, corresponding week, 1921.	Deaths under 1 year.		Infant mortality rate, week ended Feb. 4, 1922.[2]
		Total deaths.	Death rate.[1]		Week ended Feb. 4, 1922.	Corresponding week, 1921.	
Total	27,483,800	8,261	15.7	13.7	1,066	1,085	.....
Akron, Ohio	[3] 208,435	35	8.8	7.3	6	5	64
Albany, N. Y.	115,071	39	17.7	12.7	7	3	157
Atlanta, Ga.	207,473	72	18.1	17.3	8	9	.....
Baltimore, Md.	750,864	236	16.4	15.1	23	35	65
Birmingham, Ala.	186,133	54	15.1	19.6	8	10	.....
Boston, Mass.	757,634	229	15.8	15.9	38	36	102
Bridgeport, Conn.	[3] 143,555	55	20.0	14.3	12	11	150
Buffalo, N. Y.	519,608	129	12.9	16.2	18	38	71
Cambridge, Mass.	110,444	33	15.6	20.8	4	4	73
Camden, N. J.	119,672	35	15.3	13.5	10	5	153
Chicago, Ill.	2,780,655	719	13.5	13.2	110	131	.....
Cincinnati, Ohio.	403,418	142	18.4	14.9	11	19	73
Cleveland, Ohio.	831,138	194	12.2	10.9	31	28	80
Columbus, Ohio.	245,358	66	14.0	12.1	10	9	106
Dallas, Tex.	165,282	44	13.9	11.7	3	3	.....
Dayton, Ohio.	[3] 152,559	34	11.6	10.9	6	2	102
Denver, Colo.	263,152	113	22.4	13.7	10	8	.....
Detroit, Mich.	1,070,450	216	10.5	10.5	41	37	79
Fall River, Mass.	120,668	40	21.2	20.7	11	11	154
Fort Worth, Tex.	111,423	32	15.0	.....	3	.....	.....
Grand Rapids, Mich.	141,197	43	15.9	10.3	5	3	83
Houston, Tex.	144,340	35	12.6	10.8	5	3	.....
Indianapolis, Ind.	325,632	180	28.8	14.7	12	14	91
Jersey City, N. J.	302,788	94	16.2	15.5	15	15	96
Kansas City, Kans.	103,884	43	21.6	15.6	4	2	92
Kansas City, Mo.	336,157	92	14.3	13.5	12	15	.....
Los Angeles, Calif.	614,160	197	16.7	15.7	18	10	75
Louisville, Ky.	236,083	80	17.7	12.8	11	9	119
Lowell, Mass.	113,757	23	10.5	15.6	5	6	84
Memphis, Tenn.	165,656	72	22.7	11.0	12	4	.....
Milwaukee, Wis.	468,386	112	12.5	10.8	18	22	88
Minneapolis, Minn.	392,815	97	12.9	11.5	4	22	22
Nashville, Tenn.	122,036	46	19.7	20.9	10	5	.....
New Bedford, Mass.	125,012	27	11.3	10.4	8	5	119
New Haven, Conn.	167,007	54	16.9	13.1	4	3	49
New Orleans, La.	391,657	139	18.4	19.3	17	23	.....
New York, N. Y.	5,751,867	1,837	16.7	13.0	238	213	92
Newark, N. J.	424,885	138	16.9	12.5	24	12	106
Norfolk, Va.	121,260	24	10.3	9.5	6	7	106
Oakland, Calif.	226,472	67	15.4	11.7	4	4	50
Omaha, Nebr.	197,066	62	16.4	13.2	5	7	54
Paterson, N. J.	137,463	45	17.1	13.3	4	6	62
Philadelphia, Pa.	1,856,212	498	13.9	17.1	50	74	59
Pittsburgh, Pa.	602,452	238	20.6	17.4	27	23	86
Portland, Oreg.	261,859	63	12.4	13.4	9	6	89
Providence, R. I.	239,645	73	15.9	17.2	14	9	111
Richmond, Va.	175,686	79	23.4	15.4	7	9	85
Rochester, N. Y.	305,229	76	13.0	13.0	11	9	85
St. Louis, Mo.	786,164	228	15.1	13.3	16	25	.....
St. Paul, Minn.	237,781	46	10.1	8.8	8	7	75
Salt Lake City, Utah	121,595	34	14.6	12.4	3	7	45
San Francisco, Calif.	520,546	170	17.0	13.8	14	9	81
Seattle, Wash.	[3] 315,312	85	14.1	8.1	8	8	68
Spokane, Wash.	104,442	40	20.0	9.0	4	0	85
Springfield, Mass.	135,877	37	14.2	11.9	4	3	60
Syracuse, N. Y.	177,265	59	17.4	12.6	11	8	132
Toledo, Ohio.	253,696	65	13.4	14.2	9	11	88
Trenton, N. J.	122,760	56	23.8	20.4	12	9	184
Washington, D. C.	[3] 437,571	219	26.1	14.8	17	20	97
Wilmington, Del.	113,408	23	10.6	15.6	5	4	97
Worcester, Mass.	184,972	63	17.8	12.4	12	7	130
Yonkers, N. Y.	103,324	31	15.6	12.6	7	8	146
Youngstown, Ohio.	139,432	45	16.8	17.6	7	14	92

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births—based on deaths under 1 year for the week and estimated births for 1921. Cities left blank are not in the registration area for births.
[3] Enumerated population Jan. 1, 1920.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

UNITED STATES.

CURRENT STATE SUMMARIES.

Telegraphic Reports for Week Ended Feb. 11, 1922.

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

ALABAMA.	Cases.
Chicken pox	51
Diphtheria	18
Hookworm disease	40
Influenza	95
Malaria	38
Pellagra	1
Pneumonia	29
Scarlet fever	11
Smallpox:	
Butler	29
Dallas	11
Scattering	16
Tuberculosis	18
Typhoid fever	17

ARKANSAS.	
Cerebrospinal meningitis	1
Chicken pox	18
Diphtheria	10
Influenza	232
Malaria	25
Measles	5
Pellagra	4
Pneumonia	8
Scarlet fever	5
Smallpox	14
Tuberculosis	8
Typhoid fever	9

CALIFORNIA.	
Cerebrospinal meningitis:	
Kern County	1
Lindsay	1
San Francisco	4
Diphtheria	161
Influenza	845
Lethargic encephalitis—Los Angeles	1
Measles	18
Scarlet fever	133

CALIFORNIA—continued.	Cases.
Smallpox:	
Kern County	14
San Jose	16
Santa Clara County	8
Scattering	29
Typhoid fever	4

COLORADO. (Exclusive of Denver.)	
Cerebrospinal meningitis	2
Chicken pox	13
Diphtheria	21
Influenza	6
Measles	2
Mumps	6
Pneumonia	22
Scarlet fever	54
Smallpox	22
Tuberculosis	9
Typhoid fever	7
Whooping cough	2

CONNECTICUT.	
Cerebrospinal meningitis	1
Chicken pox	100
Diphtheria:	
Bridgeport	12
Hartford	17
New Haven	9
Waterbury	8
Scattering	34
German measles	7
Influenza	518
Lethargic encephalitis	4
Measles:	
Hartford	41
New Haven	20
West Hartford	11
Scattering	32

CONNECTICUT—continued.	Cases.
Mumps	26
Ophthalmia neonatorum	3
Pneumonia (lobar)	52
Poliomyelitis	1
Scarlet fever:	
Bridgeport	11
New Haven	9
Stamford	9
Scattering	71
Septic sore throat	1
Smallpox:	
Bridgeport	12
Milford	2
Tetanus	2
Tuberculosis (pulmonary)	35
Whooping cough	36

DELAWARE.

Chicken pox	22
Diphtheria	1
Influenza	2
Measles	1
Pneumonia	13
Scarlet fever:	
Wilmington	64
Scattering	19
Tuberculosis	5

FLORIDA.

Diphtheria	26
Influenza	35
Malaria	5
Ophthalmia neonatorum	1
Pneumonia	9
Scarlet fever	5
Smallpox	11
Typhoid fever	10

GEORGIA.

Chicken pox	17
Diphtheria	12
Dysentery (amebic)	1
Dysentery (bacillary)	1
Hookworm disease	6
Influenza	81
Malaria	9
Measles	10
Mumps	1
Pneumonia	31
Scarlet fever	15
Septic sore throat	6
Smallpox	136
Tetanus	2
Tuberculosis (pulmonary)	20
Typhoid fever	2
Typhus fever	1
Whooping cough	5

ILLINOIS.

Cerebrospinal meningitis:	
Chicago	1
Piatt County—Cerro Gordo Township	1
Sangamon County—Loami Township	1
Stewardson	1
Diphtheria:	
Aurora	13
Chicago	169
Scattering	137

ILLINOIS—continued.	Cases.
Influenza	417
Lethargic encephalitis—Chicago	3
Pneumonia	447
Poliomyelitis—Chicago	1
Scarlet fever:	
Chicago	159
Naperville	8
Oak Park	10
Rockford	11
Scattering	145
Smallpox:	
Chicago	8
Peoria	9
Scattering	36
Typhoid fever	9
Whooping cough	46

INDIANA.

Cerebrospinal meningitis—Henry County	2
Diphtheria	152
Scarlet fever	120
Smallpox	30
Typhoid fever	4

IOWA.

Diphtheria	26
Scarlet fever	94
Smallpox	52

KANSAS.

Cerebrospinal meningitis	2
Chicken pox	139
Diphtheria	115
German measles	2
Influenza	440
Measles	10
Mumps	21
Pneumonia	112
Poliomyelitis	1
Scarlet fever	170
Smallpox	64
Tuberculosis	23
Typhoid fever	2
Whooping cough	4

LOUISIANA.

Diphtheria	26
Influenza	39
Measles	13
Scarlet fever	11
Smallpox	34
Typhoid fever	13

MAINE.

Cerebrospinal meningitis	3
Chicken pox	22
Diphtheria	14
German measles	2
Influenza	145
Measles	1
Pneumonia	22
Scarlet fever	55
Septic sore throat	3
Smallpox	4
Tuberculosis	11
Typhoid fever	1
Whooping cough	11

MARYLAND.[1]

	Cases.
Cerebrospinal meningitis	2
Chicken pox	85
Diphtheria	44
German measles	11
Influenza	189
Malaria	1
Measles	147
Mumps	75
Pneumonia (all forms)	160
Poliomyelitis	1
Scarlet fever	92
Septic sore throat	5
Tuberculosis	48
Typhoid fever	4
Whooping cough	18

MASSACHUSETTS.

Actinomycosis	1
Cerebrospinal meningitis	2
Chicken pox	193
Conjunctivitis (suppurative)	13
Diphtheria	211
German measles	11
Influenza	1,469
Measles	528
Mumps	111
Ophthalmia neonatorum	12
Pneumonia (lobar)	244
Poliomyelitis	1
Scarlet fever	215
Septic sore throat	6
Tetanus	3
Trachoma	2
Tuberculosis (all forms)	163
Typhoid fever	6
Whooping cough	97

MINNESOTA.

Chicken pox	4
Diphtheria	55
Influenza	12
Measles	36
Pneumonia	2
Scarlet fever	216
Smallpox	89
Trachoma	1
Tuberculosis	43
Typhoid fever	6
Whooping cough	1

MISSISSIPPI.

Diphtheria	9
Scarlet fever	5
Smallpox	26
Typhoid fever	6

MISSOURI.

Cerebrospinal meningitis	1
Chicken pox	44
Diphtheria	115
Epidemic sore throat	26
Influenza	99
Measles	12
Mumps	11
Pneumonia	52

MISSOURI—continued.

	Cases.
Scarlet fever	63
Smallpox	15
Trachoma	12
Tuberculosis	41
Typhoid fever	3
Whooping cough	8

MONTANA.

Cerebrospinal meningitis	1
Diphtheria	11
Scarlet fever	32
Smallpox	35
Typhoid fever	1

NEBRASKA.

Chicken pox	27
Diphtheria	18
Influenza	6
Measles:	
Hastings	24
Omaha	22
Scattering	3
Mumps	57
Pneumonia	1
Scarlet fever	58
Smallpox	27
Typhoid fever	6

NEW JERSEY.

Cerebrospinal meningitis	4
Chicken pox	176
Diphtheria	155
Influenza	1,288
Measles	228
Pneumonia	420
Poliomyelitis	1
Scarlet fever	326
Smallpox	2
Trachoma	1
Typhoid fever	2
Whooping cough	126

NEW MEXICO.

Chicken pox	16
Diphtheria	28
Influenza	14
Mumps	10
Pneumonia	10
Scarlet fever	11
Smallpox	3
Tuberculosis	27
Whooping cough	2

NEW YORK.

(Exclusive of New York City.)

Diphtheria	198
Influenza	771
Measles	357
Pneumonia	468
Scarlet fever	336
Smallpox	3
Typhoid fever	13
Whooping cough	225

[1] Week ended Friday.

NORTH CAROLINA.

	Cases.
Cerebrospinal meningitis	3
Chicken pox	243
Diphtheria	70
German measles	4
Measles	56
Scarlet fever	56
Septic sore throat	7
Smallpox	44
Typhoid fever	1
Whooping cough	142

OREGON.

Cerebrospinal meningitis	1
Chicken pox	13
Diphtheria:	
Portland	11
Scattering	5
Influenza	168
Lethargic encephalitis—Portland	[1] 1
Measles	4
Mumps	11
Pneumonia	[1] 14
Scarlet fever	17
Smallpox:	
Portland	29
Scattering	18
Tuberculosis	6
Whooping cough	7

SOUTH DAKOTA.

Chicken pox	4
Diphtheria	12
Influenza	1
Measles	3
Pneumonia	5
Scarlet fever	43
Smallpox	52
Tuberculosis	3

TEXAS.

Diphtheria	35
Influenza	141
Measles	44
Pellagra	4
Pneumonia	46
Scarlet fever	26
Smallpox	45
Typhoid fever	9

VERMONT.

Chicken pox	28
Diphtheria	7
Influenza	2
Measles	11
Mumps	19
Pneumonia	16
Scarlet fever	38
Whooping cough	18

VIRGINIA.

	Cases.
Smallpox—Warren County	1

WASHINGTON

Chicken pox	70
Diphtheria:	
Spokane	16
Scattering	28
Influenza	1,061
Measles	8
Mumps	35
Pneumonia	12
Poliomyelitis—Bellingham	1
Scarlet fever:	
Seattle	10
Spokane	9
Scattering	25
Smallpox:	
Aberdeen	8
Spokane	11
Tacoma	11
Scattering	37
Tuberculosis	10
Typhoid fever	3
Whooping cough	21

WEST VIRGINIA.

Diphtheria	26
Influenza	62
Scarlet fever	13
Typhoid fever	5

WISCONSIN.

Milwaukee:	
Cerebrospinal meningitis	1
Chicken pox	87
Diphtheria	24
German measles	1
Influenza	3
Measles	3
Pneumonia	4
Scarlet fever	23
Smallpox	4
Tuberculosis	22
Typhoid fever	1
Whooping cough	21
Scattering:	
Cerebrospinal meningitis	1
Chicken pox	135
Diphtheria	76
German measles	1
Influenza	34
Measles	16
Pneumonia	1
Scarlet fever	155
Smallpox	54
Tuberculosis	35
Typhoid fever	3
Whooping cough	37

[1] Deaths.

Delayed Reports for Week Ended Feb. 4, 1922.

DISTRICT OF COLUMBIA.

	Cases.
Chicken pox	37
Diphtheria	22
Influenza	5
Measles	1
Scarlet fever	15
Smallpox	4
Tuberculosis	20
Whooping cough	11

KENTUCKY.

Cerebrospinal meningitis—Pike County	1
Chicken pox	10
Diphtheria:	
Jefferson County	27
Scattering	11
German measles	2
Influenza	332
Measles:	
Jefferson County	155
Scattering	6
Mumps	6
Pneumonia	70
Scarlet fever:	
Jefferson County	8
Scattering	4
Septic sore throat	1

KENTUCKY—continued.

	Cases.
Smallpox	13
Tonsillitis	3
Trachoma	6
Tuberculosis:	
Jefferson County	20
Scattering	5
Typhoid fever	6
Whooping cough	2

MISSOURI.

Cerebrospinal meningitis	2
Chicken pox	74
Diphtheria	111
Epidemic sore throat	10
Influenza	71
Measles	6
Mumps	6
Ophthalmia neonatorum	2
Pneumonia	46
Poliomyelitis	1
Scarlet fever	91
Smallpox	52
Tuberculosis	56
Typhoid fever	8
Whooping cough	15

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis	Scarlet fever.	Smallpox.	Typhoid fever.
Connecticut (January, 1922)	4	368	59	1	441	.....	1	389	95	9
District of Columbia (January, 1922)	.....	102	15	.....	13	.....	.....	77	13	5
Florida (January, 1922)	2	62	36	20	14	4	.....	17	32	44
Hawaii (October, 1921)	1	15	46	.....	9	.....	.....	2	.....	17
Hawaii (November, 1921)	2	18	11	.....	13	.....	.....	5	.....	61
Massachusetts (January, 1922)	8	912	135	1	1,275	2	8	925	.....	31
Nebraska (January, 1922)	2	121	6	.....	283	.....	.....	317	108	9

PLAGUE (RODENT).

Galveston, Tex.

One plague-infected rat (from mass inoculation) was reported positive February 14, 1922, at Galveston, Tex. Rat was trapped January 10.

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922.

ANTHRAX.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Connecticut:			Pennsylvania:		
Hartford	1	.....	Philadelphia	1	.....

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Jan. 28, 1922.	
		Cases.	Deaths.
California:			
Los Angeles	0	1	
District of Columbia:			
Washington	0	1	1
Georgia:			
Atlanta	0	1	
Rome		3	
Illinois:			
Chicago	3	2	1
Maine:			
Sanford	0	1	1
Massachusetts:			
Boston	1	1	
Southbridge	0	1	
Springfield	0	1	
Michigan:			
Detroit	1		1
Minnesota:			
Faribault			1
Missouri:			
St. Louis	1	1	
New Jersey:			
Plainfield	0	1	
West New York	0	1	
New York:			
Buffalo	1	1	
New York	5	4	2
Poughkeepsie	0	1	1
North Carolina:			
Raleigh	0	1	
Ohio:			
Columbus	0		1
Pennsylvania:			
Philadelphia	1	4	1
Rhode Island:			
Providence	1	1	
South Carolina:			
Columbia	0	1	
Tennessee:			
Memphis	0		2
Texas:			
Dallas	0	2	
Houston	0		1
Vermont:			
Burlington	0		1
West Virginia:			
Charleston	0		1

DIPHTHERIA.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

INFLUENZA.

City.	Cases.		Deaths, week ended Jan. 28, 1922.
	Week ended Jan. 29, 1921.	Week ended Jan. 28, 1922.	
Alabama:			
Montgomery	1		
Arkansas:			
Little Rock	6	1	
North Little Rock	1		
California:			
Alameda	3		
Berkeley	2		
Long Beach	1		
Los Angeles		6	
Sacramento		8	
San Diego		1	
San Francisco		17	
Vallejo		1	
Connecticut:			
Bridgeport		1	
Greenwich		4	
New Haven		1	
New London		1	
Waterbury		3	
District of Columbia:			
Washington	4	7	2
Florida:			
Tampa			1
Georgia:			
Atlanta		3	1
Augusta		2	
Rome	6	3	
Valdosta			2
Illinois:			
Chicago	18	24	4
Danville	2		
La Salle		1	
Oak Park		2	
Pekin		1	
Indiana:			
Hammond			2
Kansas:			
Kansas City		2	
Lawrence		3	
Salina		4	
Topeka	2	38	3
Kentucky:			
Lexington	1		
Louisville		7	
Louisiana:			
Baton Rouge	3		
New Orleans	1	2	3

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

INFLUENZA—Continued.

City.	Cases.		Deaths, week ended Jan. 28, 1922.
	Week ended Jan. 29, 1921.	Week ended Jan. 28, 1922.	
Maine:			
Auburn		3	
Bath		4	
Biddeford	1		
Lewiston		6	
Portland		1	
Maryland:			
Baltimore	58	41	
Cumberland	2		
Massachusetts:			
Arlington		1	1
Attleboro		1	
Boston	8	35	3
Brookline	1		
Cambridge	1	8	
Clinton	1		
Everett	1		
Fall River		2	1
Haverhill	1	4	
Leominster	1		
Lowell		1	
Lynn	1		
Melrose		1	
Methuen		1	
New Bedford	1		
Springfield		4	
Worcester	1	2	
Michigan:			
Detroit	2	7	1
Flint	5		
Grand Rapids	1		
Minnesota:			
Minneapolis	1		
Missouri:			
Independence	1		
Kansas City	3		
St. Louis		2	
New Jersey:			
Bayonne		2	
Belleville	2	3	
Englewood		1	
Jersey City	1	2	
Kearny		18	
Montclair		1	
Newark	7	44	3
Orange		4	
Passaic	4	3	
Paterson		4	
Plainfield	1	3	
Trenton	15	37	2
New York:			
Albany	3	10	
Buffalo	1	2	
Elmira	1		
New York—Continued.			
Hudson	2		
Ithaca		3	
Jamestown	1	5	
Mount Vernon	1	87	
New York	72	1,230	25
Port Chester		2	
Rochester			2
Saratoga Springs		2	
Schenectady		4	
Syracuse		2	
Watervliet	1		
Yonkers		2	1
Ohio:			
Akron	1	5	
Canton			1
Cincinnati		4	3
Cleveland	3	6	
Columbus	2		1
Hamilton	1		
Toledo			3
Youngstown		1	
Oregon:			
Portland		1	
Pennsylvania:			
Philadelphia	4	7	7
Rhode Island:			
Providence		4	
South Carolina:			
Charleston			1
Columbia		3	
South Dakota:			
Sioux Falls	2		
Tennessee:			
Memphis			1
Texas:			
Dallas	2	3	2
Houston			1
Utah:			
Salt Lake City	1		
Virginia:			
Alexandria		5	
Richmond	4		
Roanoke	1	1	1
Washington:			
Seattle		28	
West Virginia:			
Charleston		2	
Morgantown	6		
Wheeling			1
Wisconsin:			
Wausau	2	1	

LEPROSY.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Illinois:			**Louisiana:**		
Chicago	1		New Orleans	1	

LETHARGIC ENCEPHALITIS.

California:					
Oakland		1			
San Francisco	1				

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

MALARIA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Arkansas:			Maryland:		
Little Rock	2		Baltimore	1	
Florida:			Massachusetts:		
Tampa	7		Boston	1	
Georgia:			New York:		
Brunswick	2		New York	2	
Kentucky:			South Carolina:		
Louisville	1		Charleston		1
Louisiana:					
New Orleans	1				

MEASLES.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
California:			North Carolina:		
Stockton	2		Raleigh		1
Florida:			Salisbury		1
Tampa	1		South Carolina:		
Georgia:			Charleston		3
Augusta	1		Texas:		
New York:			Dallas		1
New York		1	Virginia:		
			Lynchburg		1

PNEUMONIA (ALL FORMS).

Alabama:			Illinois:		
Birmingham		6	Alton		1
Mobile		1	Aurora	1	
Montgomery		3	Bloomington		1
Arizona:			Blue Island		11
Tucson		3	Champaign	1	
Arkansas:			Chicago	233	61
Fort Smith		4	Cicero		2
Hot Springs		1	Decatur		1
Little Rock	1		East St. Louis		4
California:			Elgin		2
Eureka		1	Evanston	2	
Los Angeles	39	21	Freeport	1	
Oakland	6		Galesburg		1
Pasadena	2		Jacksonville		3
Riverside	1		Kewance		3
Sacramento	6	2	La Salle		1
San Diego	3	1	Mattoon		1
San Francisco	21	12	Oak Park		1
Santa Ana		1	Peoria		5
Santa Barbara		1	Quincy		1
Colorado:			Rock Island		1
Denver		17	Springfield	7	
Connecticut:			Indiana:		
Bridgeport		3	Crawfordsville		3
Bristol		1	Fort Wayne		2
Derby		2	Gary		2
Hartford	4	2	Hammond		4
New Haven		4	Indianapolis		17
Norwalk		1	Kokomo		2
Norwich	1		La Fayette		1
Stonington		1	Muncie		2
Waterbury		4	Newcastle		1
Delaware:			South Bend		1
Wilmington		5	Terre Haute		2
District of Columbia:			Iowa:		
Washington		25	Burlington		3
Florida:			Kansas:		
Tampa		9	Fort Scott		1
Georgia:			Kansas City	9	
Albany	3	2	Lawrence	1	
Atlanta		6	Parsons		1
Augusta	7		Topeka	24	5
Savannah		5	Wichita	10	4

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.
Kentucky:		
Covington		3
Lexington		2
Louisville	23	7
Louisiana:		
New Orleans	13	10
Maine:		
Bangor	1	
Bath	2	
Biddeford		2
Lewiston		2
Portland		4
Maryland:		
Baltimore	59	26
Cumberland	1	
Massachusetts:		
Arlington	1	
Belmont	2	
Beverly	3	1
Boston	33	25
Brookline	2	
Cambridge	5	4
Chelsea	4	1
Chicopee		1
Clinton		1
Everett	2	
Fall River	7	5
Gardner	1	
Greenfield		1
Haverhill	2	1
Holyoke	2	1
Lawrence	5	1
Leominster	2	
Lowell		4
Lynn		2
Malden		3
Melrose	1	
Methuen		1
Newburyport		1
Newton		2
Northampton	1	
Peabody	2	
Plymouth		1
Quincy	4	3
Somerville	3	1
Springfield	3	1
Watertown		1
Worcester	24	7
Michigan:		
Ann Arbor		4
Battle Creek	1	
Detroit	73	32
Hamtramck	2	
Jackson	3	2
Kalamazoo		1
Marquette		1
Muskegon	4	
Pontiac		1
Port Huron	1	
Minnesota:		
Duluth	6	2
Faribault	2	1
Hibbing		1
Minneapolis		9
Rochester	1	
St. Paul		3
Missouri:		
Kansas City	40	23
St. Joseph		10
Springfield		3
Montana:		
Billings	1	
Nebraska:		
Lincoln	2	1
Omaha		12
Nevada:		
Reno		1
New Hampshire:		
Concord		1
New Jersey:		
Atlantic City	2	1
Bayonne	2	
Belleville	4	
Bloomfield	1	
Clifton	2	
Elizabeth		7
Garfield	2	1
Harrison	1	
Hoboken		5
Jersey City	16	
Kearny	5	1
Montclair		2
Morristown		1
Newark	96	17
Orange	4	
Passaic		3
Paterson	6	
Phillipsburg		1
Plainfield	8	
Summit	2	
Trenton	37	9
New Mexico:		
Albuquerque	2	
New York:		
Albany	12	
Auburn	2	
Buffalo	24	19
Cortland	2	1
Elmira		3
Glens Falls		1
Hornell		1
Hudson	4	1
Ithaca	4	1
Jamestown	4	1
Lackawanna	6	2
Lockport		1
Mount Vernon	10	5
New York	643	277
Niagara Falls	1	
Ogdensburg		1
Peekskill	1	
Port Chester	5	
Poughkeepsie		3
Rochester	21	12
Rome	9	1
Schenectady	4	2
Syracuse	27	6
Watertown		1
White Plains	7	2
Yonkers	17	6
North Carolina:		
Salisbury		1
Wilmington		1
Ohio:		
Akron	6	
Alliance		1
Barberton	3	1
Bucyrus		1
Canton		2
Chillicothe		1
Cincinnati		16
Cleveland	48	28
Columbus		9
Dayton	1	
East Cleveland	3	1
Fremont	2	
Hamilton		1
Kenmore	1	
Lakewood		1
Lancaster		1
Lima		3
Lorain	1	
Mansfield	3	1
Newark		1
Niles	1	
Springfield		2
Toledo		9
Youngstown		9
Zanesville		1

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Oklahoma:			Utah:		
Oklahoma City		11	Salt Lake City		7
Tulsa	1		Vermont:		
Oregon:			Burlington		1
Portland		6	Rutland	1	
Pennsylvania:			Virginia:		
Philadelphia	137	79	Alexandria	3	1
Rhode Island:			Lynchburg		2
Pawtucket		1	Norfolk		5
Providence		17	Petersburg		3
South Carolina:			Richmond		4
Charleston		3	Roanoke	5	3
Greenville		1	West Virginia:		
Tennessee:			Bluefield		1
Memphis		11	Charleston		2
Texas:			Clarksburg		3
Beaumont		1	Huntington		2
Dallas	9	5	Wheeling		4
El Paso		9	Wisconsin:		
Fort Worth		2	Kenosha		1
Galveston		4	Milwaukee	6	
Houston		2	Oshkosh		2
Waco		3	Racine		2

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Jan. 28, 1922.		City.	Median for previous years.	Week ended Jan. 28, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Pennsylvania:			
San Bernardino		1	1	Carlisle		1	
New York:				Reading	0	1	
New York	1	2					
Ohio:							
Dayton	0	1					

RABIES IN ANIMALS.

City.	Cases.
California:	
Los Angeles	2

SCARLET FEVER.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Jan. 28, 1922.	
		Cases.	Deaths.
Alabama:			
Mobile	0	1	.....
Montgomery	2	1	.....
California:			
Long Beach	0	1	.....
Oakland	0	5	.....
San Francisco	0	2	.....
Colorado:			
Denver	20	25	8
Connecticut:			
Bridgeport	0	8	.....
District of Columbia:			
Washington	0	2	.....
Georgia:			
Atlanta	0	3	.....
Macon	1	2	.....
Illinois:			
Centralia	1	2	.....
Chicago	1	9	1
East St. Louis	14	1	.....
Pekin	6	1	.....
Peoria	0	19	.....
Indiana:			
Anderson	3	1	.....
Fort Wayne	0	4	.....
Indianapolis	10	3	.....
Terre Haute	1	1	.....
Iowa:			
Burlington	0	5	.....
Davenport	3	3	.....
Muscatine	0	4	.....
Sioux City	6	1	.....
Kansas:			
Hutchinson	0	16	.....
Kansas City	1	7	.....
Parsons	1	1	.....
Topeka	0	1	.....
Wichita	1	.....	1
Maine:			
Waterville	1	2	.....
Michigan:			
Alpena	0	1	.....
Detroit	13	6	.....
Flint	6	5	.....
Minnesota:			
Austin	.....	2	.....
Duluth	0	1	.....
Faribault	.....	2	.....
Hibbing	0	1	.....
Minneapolis	20	17	.....
St. Paul	6	21	.....
Missouri:			
Kansas City	8	5	6
Montana:			
Billings	0	1	.....
Great Falls	2	1	.....
Nebraska:			
Omaha	15	1	.....
New Jersey:			
Paterson	.....	1	.....
North Carolina:			
Wilmington	0	3	.....
Grand Forks	5	1	.....
Ohio:			
Canton	1	2	.....
Dayton	1	11	.....
Fremont	0	4	.....
Springfield	0	12	.....
Youngstown	1	1	.....
Oklahoma:			
Oklahoma City	3	5	.....
Tulsa	3	2	.....
Oregon:			
Portland	2	24	.....
South Dakota:			
Sioux Falls	0	2	.....
Tennessee:			
Knoxville	1	3	.....
Memphis	3	4	.....
Texas:			
Dallas	14	1	.....
El Paso	0	2	.....
Fort Worth	6	1	.....
Utah:			
Salt Lake City	8	3	.....
Virginia:			
Alexandria	0	1	.....
Danville	0	1	.....
Washington:			
Seattle	8	3	.....
Spokane	22	5	.....
Tacoma	1	13	.....
West Virginia:			
Bluefield	0	1	.....
Wisconsin:			
Manitowoc	0	3	.....
Milwaukee	9	4	.....
Superior	0	18	.....

TETANUS.

City.	Cases.	Deaths.
Florida:		
Tampa	.....	1
New York:		
Elmira	.....	1
Poughkeepsie	1	1
South Carolina:		
Charleston	.....	1
West Virginia:		
Charleston	.....	1

TUBERCULOSIS.

See p. 369; also Telegraphic weekly reports from States, p. 358.

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Jan. 28, 1922.	
		Cases.	Deaths.
Alabama:			
Birmingham	0	1	.....
Mobile	0	1	.....
California:			
Los Angeles	2	2	.....
Oakland	0	1	.....
Sacramento	0	1	.....
San Francisco	2	2	.....
Santa Ana	0	.....	1
Colorado:			
Denver	1	1	.....
Connecticut:			
Waterbury	0	3	.....
District of Columbia:			
Washington	1	2	1
Florida:			
Tampa	.....	4	2
Georgia:			
Macon	0	1	.....
Savannah	1	1	.....
Illinois:			
Chicago	6	5	3
Quincy	0	1	.....
Springfield	0	1	.....
Indiana:			
Logansport	0	1	.....
Louisiana:			
New Orleans	1	7	1
Maine:			
Bangor	0	1	.....
Maryland:			
Cumberland	0	.....	1
Massachusetts:			
Boston	1	3	.....
Fall River	0	1	.....
Peabody	0	1	.....
Michigan:			
Detroit	1	2	.....
Port Huron	0	1	.....
Minnesota:			
Minneapolis	0	1	.....
St. Paul	0	1	.....
Missouri:			
Independence	2	4	1
St. Louis	2	1	1
New Jersey:			
Asbury Park	0	1	.....
New York:			
Albany	0	2	.....
Buffalo	2	.....	1
Hudson	0	2	.....
Lackawanna	2	1	.....
New York	14	7	2
Rochester	0	1	1
Syracuse	0	2	.....
Troy	0	1	.....
Ohio:			
Cleveland	1	1	1
Columbus	0	1	.....
Oregon:			
Portland	0	2	.....
Pennsylvania:			
Beaver Falls	0	1	.....
Canonsburg	0	2	.....
Erie	0	1	.....
Farrell	0	1	.....
Lancaster	0	1	.....
Philadelphia	5	2	3
Pittsburgh	1	1	.....
Rhode Island:			
Providence	0	1	.....
Tennessee:			
Knoxville	0	1	1
Texas:			
Beaumont	0	1	.....
Dallas	0	1	.....
El Paso	0	1	.....
Virginia:			
Alexandria	0	1	.....
Portsmouth	0	1	.....
Wisconsin:			
Eau Claire	0	1	.....
Milwaukee	1	1	.....
Superior	0	1	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Anniston	17,734	.....	1	.....	1	.....	.....	.....	2	.....
Birmingham	178,270	43	.....	.....	.....	.....	3	.....	1	3
Mobile	60,151	15	.....	.....	.....	.....	1	.....	.....	4
Montgomery	43,464	16	.....	.....	.....	.....	.....	.....	3	2
Tuscaloosa	11,996	.....	2	.....	.....	.....	1	.....	.....	.....
Arizona:										
Tucson	20,292	21	.....	.....	.....	.....	.....	.....	.....	11
Arkansas:										
Fort Smith	28,811	4	2	.....	.....	.....	.....	.....	.....	.....
Hot Springs	11,695	6	.....	.....	.....	.....	2	.....	.....	1
Little Rock	64,997	.....	1	.....	.....	.....	1	.....	1	.....

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
California:										
Alameda	28,806	6	3	.....	1	.....	2	.....	1	.....
Eureka	12,923	4	3	.....	.....	.....	1	.....	.....	1
Long Beach	55,593	20	4	.....	.....	.....	1	.....	1	.....
Los Angeles	576,673	213	74	3	4	.....	29	.....	54	25
Oakland	216,361	41	20	1	.....	.....	2	.....	2	4
Pasadena	45,354	17	.....	.....	2	.....	.....	.....	.....	1
Richmond	16,843	8	1	.....	.....	.....	.....	.....	.....	.....
Riverside	19,341	4	2	.....	.....	.....	.....	.....	.....	.....
Sacramento	65,857	22	5	.....	.....	.....	.....	.....	3	1
San Bernardino	18,721	10	3	1	1	.....	2	.....	.....	2
San Diego	74,683	36	3	1	.....	.....	8	1	11	3
San Francisco	508,410	173	80	8	.....	1	11	.....	32	17
Santa Ana	15,485	4	.....	.....	.....	.....	1	.....	.....	1
Stockton	40,296	10	8	.....	.....	.....	9	.....	.....	.....
Vallejo	21,107	2	.....	.....	.....	.....	.....	.....	.....	.....
Colorado:										
Denver	256,369	97	16	1	2	.....	16	.....	.....	17
Greeley	10,883	3	.....	.....	.....	.....	.....	.....	.....	.....
Pueblo	42,908	9	6	1	.....	.....	5	.....	.....	1
Connecticut:										
Bridgeport	143,538	34	4	.....	3	.....	8	.....	1	.....
Bristol	20,620	4	1	.....	.....	.....	.....	.....	1	.....
Derby	11,238	6	.....	.....	.....	.....	.....	.....	1	.....
Fairfield (town)	11,475	2	1	.....	.....	.....	2	.....	.....	.....
Greenwich (town)	22,123	.....	.....	.....	.....	.....	1	.....	1	1
Hartford	138,036	39	10	1	15	.....	5	.....	6	1
Meriden (city)	29,842	.....	6	.....	.....	.....	2	.....	.....	.....
Milford (town)	10,193	.....	4	.....	.....	.....	.....	.....	.....	.....
New Haven	162,519	59	8	1	4	.....	14	1	9	6
New London	25,688	8	1	.....	1	.....	1	.....	2	1
Norwalk	27,700	6	.....	.....	.....	.....	.....	.....	.....	.....
Norwich (city)	22,304	.....	2	.....	2	.....	1	.....	.....	.....
Stonington (town)	10,236	3	4	.....	.....	.....	.....	.....	.....	.....
Waterbury	91,410	25	1	1	.....	.....	3	.....	2	2
Delaware:										
Wilmington	110,168	30	1	.....	.....	.....	50	.....	.....	2
District of Columbia:										
Washington	437,571	141	22	.....	3	.....	24	.....	26	11
Florida:										
Tampa	51,252	39	.....	.....	.....	.....	1	.....	9	2
Georgia:										
Albany	11,555	2	1	.....	.....	.....	.....	.....	.....	.....
Atlanta	200,616	61	3	1	.....	.....	4	.....	4	7
Augusta	52,548	.....	2	.....	1	.....	1	.....	2	.....
Brunswick	14,413	2	.....	.....	.....	.....	1	.....	.....	.....
Macon	52,995	.....	2	.....	.....	.....	2	.....	.....	.....
Rome	13,252	.....	.....	.....	.....	.....	2	.....	.....	.....
Savannah	83,252	36	1	.....	.....	.....	.....	.....	6	6
Valdosta	10,783	3	.....	.....	.....	.....	.....	.....	1	1
Idaho:										
Boise	21,393	5	.....	.....	1	.....	3	.....	.....	.....
Pocatello	15,001	3	.....	.....	.....	.....	.....	.....	.....	.....
Illinois:										
Alton	24,682	9	4	.....	1	.....	2	.....	.....	.....
Aurora	36,397	11	1	.....	9	.....	.....	.....	.....	1
Bloomington	28,725	10	1	.....	.....	.....	.....	.....	2	1
Blue Island	11,424	6	1	.....	.....	.....	.....	.....	.....	.....
Centralia	12,491	3	.....	.....	.....	.....	2	.....	.....	.....
Chicago	2,701,705	596	208	21	145	1	103	3	216	40
Cicero	44,995	10	7	1	2	.....	3	.....	2	.....
Decatur	43,818	12	5	.....	1	.....	1	.....	.....	1
East St. Louis	66,740	15	2	.....	.....	.....	.....	.....	2	1
Elgin	27,454	11	.....	.....	.....	.....	.....	.....	2	1
Evanston	37,215	9	.....	.....	1	.....	5	.....	.....	.....
Forest Park	10,768	.....	2	.....	5	.....	.....	.....	.....	.....
Freeport	19,669	7	10	.....	.....	.....	.....	.....	.....	.....
Galesburg	23,834	5	2	.....	.....	.....	1	.....	.....	.....
Jacksonville	15,713	6	.....	.....	.....	.....	3	.....	.....	1
Kewanee	16,026	8	.....	.....	.....	.....	2	.....	.....	.....
La Salle	13,050	1	.....	.....	.....	.....	.....	.....	1	.....
Mattoon	13,552	3	.....	.....	.....	.....	.....	.....	.....	.....
Oak Park	39,830	17	2	.....	7	.....	4	.....	.....	.....
Pekin	12,086	.....	4	.....	.....	.....	.....	.....	.....	.....

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Illinois—Continued.										
Peoria	76,121	27	3	2	3	.....	1	.....	.....	1
Quincy	35,978	8	1	1	.....	.....	9	.....	.....	.....
Rock Island	35,177	11	.....	.....	.....	.....	.....	.....	1	.....
Springfield	59,183	17	.....	.....	.....	.....	1	.....	.....	.....
Indiana:										
Anderson	29,767	6	10	2	.....	.....	.....	.....	.....	2
Crawfordsville	10,139	8	.....	.....	.....	.....	.....	.....	.....	.....
Fort Wayne	36,549	14	10	.....	.....	.....	1	.....	11	1
Frankfort	11,585	1	.....	.....	.....	.....	.....	.....	.....	.....
Gary	55,378	11	2	.....	.....	.....	2	.....	.....	.....
Hammond	36,004	12	.....	.....	1	.....	1	.....	.....	.....
Huntington	14,000	2	1	.....	.....	.....	1	.....	.....	.....
Indianapolis	314,194	99	15	1	4	.....	10	.....	7	4
Kokomo	30,067	7	.....	.....	.....	.....	2	.....	1	2
La Fayette	22,486	6	.....	.....	.....	.....	1	.....	1	1
Logansport	21,626	7	1	.....	.....	.....	3	.....	1	1
Mishawaka	15,195	5	2	.....	.....	.....	3	.....	.....	.....
Muncie	36,624	5	1	.....	.....	.....	.....	.....	.....	1
Newcastle	14,458	7	.....	.....	.....	.....	.....	.....	.....	.....
South Bend	70,983	13	1	1	.....	.....	1	.....	.....	.....
Terre Haute	66,083	21	5	1	.....	.....	3	.....	.....	.....
Iowa:										
Burlington	24,057	9	1	.....	.....	.....	1	.....	.....	.....
Davenport	56,727	.....	1	.....	.....	.....	1	.....	.....	.....
Dubuque	39,141	.....	3	.....	.....	.....	.....	.....	.....	.....
Marshalltown	15,731	.....	.....	.....	.....	.....	5	.....	.....	.....
Mason City	20,065	3	.....	.....	.....	.....	2	.....	.....	.....
Muscatine	16,068	7	1	.....	.....	.....	1	.....	.....	.....
Sioux City	71,227	.....	9	.....	.....	.....	1	.....	.....	.....
Waterloo	36,230	.....	2	.....	.....	.....	2	.....	.....	.....
Kansas:										
Atchison	12,630	.....	5	.....	.....	.....	3	.....	.....	.....
Coffeyville	13,452	4	2	.....	.....	.....	.....	.....	6	.....
Fort Scott	10,693	5	2	.....	.....	.....	2	.....	.....	.....
Hutchinson	23,293	.....	3	.....	.....	.....	2	.....	.....	.....
Kansas City	101,177	.....	6	.....	.....	.....	4	.....	2	.....
Lawrence	12,456	2	2	.....	.....	.....	.....	.....	.....	.....
Leavenworth	16,912	.....	1	.....	.....	.....	1	.....	1	.....
Parsons	16,028	7	.....	.....	.....	.....	2	.....	.....	.....
Salina	15,085	4	.....	.....	.....	.....	1	.....	.....	.....
Topeka	50,022	25	8	.....	1	.....	2	.....	.....	.....
Wichita	72,128	26	8	.....	.....	.....	9	.....	6	.....
Kentucky:										
Covington	57,121	20	1	.....	11	.....	1	.....	.....	1
Lexington	41,534	16	.....	.....	.....	.....	.....	.....	.....	2
Louisville	234,891	79	14	4	93	.....	3	.....	14	8
Owensboro	17,424	.....	1	.....	1	.....	.....	.....	.....	.....
Paducah	24,735	.....	.....	.....	1	.....	.....	.....	.....	.....
Louisiana:										
New Orleans	387,219	131	15	.....	.....	.....	12	.....	27	2
Maine:										
Auburn	16,985	8	.....	.....	.....	.....	11	.....	.....	.....
Bath	14,731	5	.....	.....	.....	.....	.....	.....	.....	.....
Biddeford	18,008	8	.....	.....	.....	.....	.....	.....	.....	.....
Lewiston	31,791	9	1	.....	.....	.....	.....	.....	1	.....
Portland	69,272	25	2	.....	.....	.....	7	.....	.....	1
Sanford	10,691	1	.....	.....	.....	.....	.....	.....	.....	.....
Waterville	13,351	.....	.....	.....	.....	.....	1	.....	.....	.....
Maryland:										
Baltimore	733,826	227	38	4	89	.....	59	.....	30	24
Cumberland	29,837	9	.....	.....	1	.....	2	.....	1	1
Massachusetts:										
Amesbury	10,036	3	.....	.....	.....	.....	.....	1	.....	.....
Arlington	18,665	2	.....	.....	2	.....	3	.....	.....	.....
Attleboro	19,731	6	1	.....	.....	.....	.....	.....	.....	1
Belmont	10,749	2	.....	.....	.....	.....	2	.....	.....	.....
Beverly	22,561	6	1	.....	.....	.....	2	.....	.....	.....
Boston	748,060	226	60	6	96	.....	50	2	28	17
Braintree	10,580	2	1	.....	.....	.....	2	.....	.....	1
Brookline	37,748	5	.....	.....	.....	.....	2	.....	.....	.....
Cambridge	109,694	27	4	.....	18	.....	9	.....	5	6
Chelsea	43,184	13	2	.....	1	.....	5	.....	.....	1
Chicopee	36,214	8	2	.....	.....	.....	.....	.....	2	1
Clinton	12,979	5	.....	.....	.....	.....	2	.....	2	.....
Danvers	11,408	.....	1	.....	.....	.....	1	.....	.....	.....

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Dedham	10,792	2	1		1				2	
Everett	40,120	8	3	2	7		4		1	
Fall River	120,485	32	9	1			6			1
Framingham	17,033	3	1							
Gardner	16,971	3					3			1
Greenfield	15,462	2			21				1	
Haverhill	53,884	7	4	1	1		1			
Holyoke	60,203	19	1				2			2
Lawrence	94,270	27	3		22		1		3	2
Leominster	19,744	6					1			1
Lowell	112,479	39	3		3		1		1	3
Lynn	99,148	22	9	1	2		1		1	
Malden	49,103	13	8		2		7		3	
Medford	39,038	9			23		3			2
Melrose	18,204	3	1							
Methuen	15,189	3			13				1	
Newburyport	15,618	7								1
Newton	46,054	14	5				1			
North Adams	22,282	6					2		1	
Northampton	21,951	3	2				1		1	
Peabody	19,552	4			3				1	
Pittsfield	41,751	9	1				2		2	2
Plymouth	13,045	7		1						
Quincy	47,876	14	2		28		7		1	
Somerville	93,091	25	4		19		1		3	2
Southbridge	14,245	2							2	
Springfield	129,563	30	3	1	5		7		3	1
Wakefield	13,025	3	3							
Waltham	30,915	5	2	1	15		1			
Watertown	21,457	2	1		2				1	
Webster	13,258	2	1				5			
West Springfield	13,443	3								1
Westfield	18,604	2			2					
Weymouth	15,057	1								
Winthrop	15,455	1								
Woburn	16,574	4								
Worcester	179,754	47	4	1	2		9	1	6	1
Michigan:										
Alpena	11,101		1				4			
Ann Arbor	19,516	11	1						3	
Battle Creek	36,164				7		3			
Benton Harbor	12,233	1					4			
Detroit	993,739	208	97	7	237	1	81		36	15
Flint	91,599	13	23	1	1		9			1
Hamtramck	48,615	6	4						1	
Jackson	48,374	11	3				14			
Kalamazoo	48,858	20	8		1		17	2	1	1
Marquette	12,718	3								
Muskegon	36,570	3	1				1			
Pontiac	34,273	11	1				1			1
Port Huron	25,944	3	1				1			
Sault Ste. Marie	12,096	4								
Minnesota:										
Duluth	98,917	19	12	1			7			1
Faribault	11,089	5								
Hibbing	15,089	5	1							
Minneapolis	380,582	79	25		20		32	1	20	7
Rochester	13,722	6					1			
St. Cloud	15,873		1				4			
St. Paul	234,595	71	6				30	1	22	5
Virginia	14,022						2		1	
Winona	19,143						2			
Missouri:										
Independence	11,686	14	2	1						
Joplin	29,855		2							
Kansas City	324,410	126	21	4			9		18	9
Saint Joseph	77,939	39	3				2			2
Saint Louis	772,897	202	80	4	2		15		32	10
Springfield	39,631	20								1
Montana:										
Anaconda	11,668									1
Billings	15,100	8	1				1			
Great Falls	24,121	6			2				2	
Missoula	12,668	4								

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Nebraska:										
Lincoln	54,934	12	2	.....	10	.....	4	.....	.....	1
Omaha	191,601	50	10	1	30	.....	1	.....	.....	3
Nevada:										
Reno	12,016	1	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire:										
Berlin	16,104	5	.....	.....	.....	.....	1	.....	.....	.....
Concord	22,167	12	.....	.....	.....	.....	3	.....	.....	.....
Dover	13,029	3	.....	.....	5	.....	.....	.....	.....	.....
Keene	11,210	4	.....	.....	.....	.....	.....	.....	2	.....
New Jersey:										
Asbury Park	12,400	3	1	.....	.....	.....	.....	.....	.....	.....
Atlantic City	50,682	10	.....	.....	2	.....	4	.....	1	1
Bayonne	76,754	.....	4	.....	.....	.....	3	.....	4	.....
Belleville	15,660	.....	2	.....	.....	.....	9	.....	1	.....
Bloomfield	22,019	3	.....	.....	1	.....	1	.....	.....	.....
Clifton	26,470	1	.....	.....	.....	.....	2	.....	.....	.....
Elizabeth	95,682	.....	12	.....	2	.....	17	.....	1	.....
Englewood	11,627	2	.....	.....	.....	.....	5	.....	.....	.....
Garfield	19,381	1	1	.....	.....	.....	.....	.....	1	.....
Hoboken	68,166	17	4	.....	1	.....	1	.....	2	.....
Jersey City	297,864	.....	21	.....	23	.....	23	.....	8	.....
Kearny	26,724	5	.....	.....	1	.....	7	.....	1	1
Montclair	28,810	5	.....	.....	.....	.....	8	.....	.....	.....
Morristown	12,548	10	.....	.....	.....	.....	10	.....	.....	.....
Newark	414,216	102	26	2	48	.....	71	.....	21	7
Orange	33,268	7	4	.....	.....	.....	2	.....	1	1
Passaic	63,824	23	4	.....	1	.....	3	.....	3	2
Paterson	135,866	.....	8	.....	25	.....	6	.....	5	.....
Perth Amboy	41,707	6	12	.....	8	.....	3	.....	.....	1
Phillipsburg	16,923	1	.....	.....	.....	.....	.....	.....	.....	.....
Plainfield	27,700	26	1	.....	7	.....	5	.....	1	.....
Rahway	11,042	3	3	.....	.....	.....	.....	.....	.....	.....
Summit	10,174	2	.....	.....	.....	.....	4	.....	.....	.....
Trenton	119,289	51	5	2	3	.....	8	.....	7	3
Union	20,651	.....	.....	.....	.....	.....	5	.....	.....	.....
West Hoboken	40,068	3	2	.....	3	.....	3	.....	1	.....
West New York	29,926	1	.....	.....	.....	.....	4	.....	1	.....
West Orange	15,573	2	.....	.....	.....	.....	2	.....	.....	.....
New Mexico:										
Albuquerque	15,157	11	.....	.....	.....	.....	11	.....	8	3
New York:										
Albany	113,344	.....	5	.....	13	.....	.....	.....	2	.....
Auburn	36,192	17	4	1	.....	.....	1	1	.....	.....
Buffalo	506,775	135	18	2	3	.....	40	1	20	10
Cortland	13,294	4	.....	.....	.....	.....	.....	.....	2	.....
Elmira	45,305	13	.....	.....	9	.....	4	.....	.....	.....
Fulton	13,043	4	.....	.....	.....	.....	.....	.....	.....	.....
Geneva	14,648	1	.....	.....	.....	.....	.....	.....	.....	.....
Glens Falls	16,638	6	1	.....	.....	.....	.....	.....	.....	.....
Hornell	15,025	4	1	.....	.....	.....	.....	.....	.....	.....
Hudson	11,745	5	2	.....	21	.....	1	.....	.....	.....
Ithaca	17,004	5	1	.....	2	.....	1	.....	1	.....
Jamestown	38,917	10	7	.....	15	.....	7	.....	.....	1
Lackawanna	17,918	3	3	.....	.....	.....	1	.....	.....	.....
Lockport	21,308	8	.....	.....	.....	.....	.....	.....	1	.....
Middletown	18,420	.....	.....	.....	.....	.....	1	.....	1	.....
Mount Vernon	42,726	11	2	.....	.....	.....	13	.....	2	.....
Newburgh	30,366	6	.....	.....	1	.....	1	.....	.....	.....
New York	5,621,151	1,523	236	18	565	17	375	5	259	116
Niagara Falls	50,760	6	4	.....	.....	.....	7	.....	.....	.....
North Tonawanda	15,482	3	7	.....	.....	.....	2	.....	.....	.....
Ogdensburg	14,609	3	.....	.....	.....	.....	.....	.....	.....	.....
Peekskill	15,868	4	1	.....	.....	.....	1	.....	.....	.....
Port Chester	16,573	4	2	.....	.....	.....	.....	.....	.....	.....
Poughkeepsie	35,000	9	2	.....	12	.....	2	.....	1	.....
Rochester	295,750	66	13	1	.....	.....	3	.....	10	.....
Rome	26,341	11	7	.....	2	.....	.....	.....	.....	.....
Saratoga Springs	13,181	4	1	.....	.....	.....	1	.....	1	.....
Schenectady	88,723	24	10	.....	.....	.....	4	.....	1	.....
Syracuse	171,717	53	26	3	4	.....	16	.....	8	2
Troy	72,013	14	6	.....	1	.....	2	.....	4	.....
Watertown	31,285	6	.....	.....	.....	.....	5	.....	1	.....
Watervliet	16,073	6	.....	.....	.....	.....	.....	.....	.....	.....
White Plains	21,031	6	.....	.....	36	.....	4	.....	.....	.....
Yonkers	100,226	17	6	.....	4	1	13	.....	.....	.....

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
North Carolina:										
Durham	21,719	2	1				2			1
Greensboro	19,861	5								
Raleigh	24,418	16	1						2	
Rocky Mount	12,742	1								
Salisbury	13,884	7								2
Wilmington	33,372	18	1							
Winston-Salem	48,395	20					3		9	5
North Dakota:										
Fargo	21,961	0	3				4			
Grand Forks	14,010						3			
Ohio:										
Akron	208,435	35	5		8		16		19	
Alliance	21,603	4					1			1
Ashtabula	22,082	5					2			
Barberton	18,811	8	2	1			1			
Bucyrus	10,425	2								
Canton	87,091	15	10		1		4			
Chillicothe	15,831	6	1				1			1
Cincinnati	401,247	145	15	3	54		12		19	15
Cleveland	796,836	157	24	2	73		53	2	37	8
Columbus	237,031	68	15	1	1		5		4	2
Coshocton	10,847		1				3			
Dayton	152,559	32	3		1		3			
East Cleveland	27,292	2			1		4		3	
Findlay	17,021	5			1		1			
Fremont	12,468	2	1						1	
Hamilton	39,675	13	2				1			1
Kenmore	12,683		3							
Lakewood	41,732	6	1				5			
Lancaster	14,706	5	3							1
Lima	41,306	11	5		2		2			1
Lorain	37,295				1		3			
Mansfield	27,824	6					1		1	
Marion	27,891		3							
Martins Ferry	11,634	3	3							
Newark	26,718	20	6	1			3			3
New Philadelphia	10,718		1				1			
Niles	13,080	8	2				1			
Norwood	24,966	3			1		2			
Piqua	15,044	5							1	
Salem	10,305	3					2			
Springfield	60,840	15	7		2					
Steubenville	28,508	5					1			
Tiffin	14,375	4								
Toledo	243,109	63	22		1		9		9	1
Youngstown	132,358	38	11		4	1	8			
Zanesville	29,569	11	2				1			3
Oklahoma:										
Oklahoma City	91,258	33	3				2		4	1
Tulsa	72,075				2		1			
Oregon:										
Portland	258,288	56	14				2		2	3
Pennsylvania:										
Allentown	73,502		4				4		3	
Altoona	60,331		3				2			
Ambridge	12,730		2							
Beaver Falls	12,802						1			
Berwick	12,181				3		1			
Bethlehem	50,358		5		2		8			
Braddock	20,879		3							
Bradford	15,525						1			
Butler	23,778		1							
Canonsburg	10,632						1			
Carnegie	11,516		1							
Chambersburg	13,171		2							
Charleroi	11,516		1						4	
Chester	58,030				1		3		1	
Connellsville	13,804		2		1		2		2	
Dickson City	11,049		1							
Donora	14,131		1						1	
Dubois	18,681		1							
Duquesne	19,011		1				1			
Easton	33,813		1				1		1	
Erie	93,372		3						1	

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Pennsylvania—Continued.										
Farrell	15,586				4		1			
Harrisburg	75,917		10				6			
Hazleton	32,277		3		4		1			
Jeannette	10,627		1				1			
Johnstown	67,327		2		1					
Lancaster	53,150		3		6		6			
Lebanon	24,643						1		2	
McKeesport	45,975		1				2			
McKee's Rocks	16,713		2		1		3			
Mahanoy City	15,599		1							
Monessen	18,179		5				1			
Mount Carmel	17,469		1							
Nanticoke	22,614		6							
New Castle	44,938		3				5			
New Kensington	11,987				3		1			
Norristown	32,319		1				3			
North Braddock	14,928		1							
Oil City	21,274						2			
Old Forge	12,237		1							
Philadelphia	1,823,158	551	73	5	6		144	6	75	46
Phoenixville	10,484						1			
Pittsburgh	588,193		29		21		61		15	
Plymouth	16,500		3		1					
Pottstown	17,431		2		1		19			
Pottsville	21,876		1		7					
Reading	107,784		12		4		1			
Scranton	137,783		8		1		8			
Shamokin	21,204						1			
Sharon	21,747				8		3			
Shenandoah	24,726		1							
Steelton	13,428		1				1			
Sunbury	15,721				13					
Swissvale	10,908		4							
Uniontown	15,692		1				1			
Warren	14,256		1				1			
Washington	21,480		1		12		1			
West Chester	11,717						1			
Wilkes-Barre	73,833		8		23		1			
Wilkinsburg	24,403				2					
Williamsport	36,198		2							
York	47,512		2						1	
Rhode Island:										
Cranston	29,407	7					1			1
Cumberland (town)	10,077		1							
Newport	30,255	4					13	1		
Pawtucket	64,248	21	13	1						
Providence	237,595	75	12	1	1		2			7
South Carolina:										
Charleston	67,957	31	1				6			1
Columbia	37,524		3		1					
Greenville	23,127	1					1			
South Dakota:										
Sioux Falls	25,176	5					1			
Tennessee:										
Knoxville	77,818		1	1	6		1		1	1
Memphis	162,351	23	6					1	9	8
Texas:										
Beaumont	40,422	9								1
Corpus Christi	10,522	4	1							1
Dallas	158,976	56	10		46		4		5	1
El Paso	77,543	38	1				2			5
Fort Worth	106,482	16					2			
Galveston	44,255	7								1
Houston	138,076	44	1	1					3	1
Waco	38,500	13	2						1	
Utah:										
Salt Lake City	118,110	32	3				9			1
Vermont:										
Barre	10,008						2			
Burlington	22,779	8	5		2		3			
Rutland	14,954	5								

CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population January 1, 1920, subject to correction.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Virginia:										
Alexandria	18,060	4								
Danville	21,539	7			6				1	
Lynchburg	29,956	8								2
Norfolk	115,777		1	1			2		4	3
Petersburg	31,002	10								
Portsmouth	54,387	18	1				1		1	3
Richmond	171,667	47	18	2	21		4		10	5
Roanoke	50,842	15	2	1					1	
Washington:										
Seattle	315,652		4		1		5			
Spokane	104,437		6		1		3			
Tacoma	96,965		6				1		2	
West Virginia:										
Bluefield	15,282	8	2	1	1					
Charleston	39,608	24	2							2
Clarksburg	27,869	6	2				1			
Fairmont	17,851		3		2		2			
Huntington	50,177	16								1
Morgantown	12,127		3							
Moundsville	10,669	3			2		5			
Wheeling	54,322	19	2				4			
Wisconsin:										
Appleton	19,561		4				1			
Ashland	11,334								1	
Beloit	21,284	5	1	1			4			
Fond du Lac	23,427	7	3						7	
Green Bay	31,017	7	3				3			
Janesville	18,293	6	1							1
Kenosha	40,472	8	4		1		3		2	
La Crosse	30,363		1		1		2			
Madison	38,378				1		4			
Manitowoc	17,563								1	
Marinette	13,610						1			
Milwaukee	457,147		11		3		17		16	
Oshkosh	33,162	7	2				2		1	1
Racine	58,593	10	3		1		20		1	1
Sheboygan	30,955		4				1			
Superior	39,624	9	1				8			
Waukesha	12,558						4		1	
Wausau	18,661								1	
West Allis	13,765		2				1			
Wyoming:										
Cheyenne	13,829	2					1			

FOREIGN AND INSULAR.

PLAGUE ON VESSEL.

Steamship "Polycarp"—At Para, Brazil.

On February 3, 1922, a case of pneumonic plague was reported removed at Para, Brazil, from the steamship *Polycarp*, from Ceara, Brazil, via Manaos, Maranham, and Para for New York.

AUSTRALIA.

Plague—Brisbane—Sydney.

Plague has been reported in Australia as follows: New South Wales, Sydney, two weeks ended February 11, 1922, two cases; Queensland, Brisbane, week ended January 28, 1922, one case.

BARBADOS.

Typhoid Fever.

Typhoid fever has been reported in Barbados as follows: Week ended January 14, 1921, 182 cases; week ended January 21, 1921, 30 cases.

CHINA.

Smallpox—Shanghai.

Smallpox has been reported prevalent at Shanghai, China, with 45 cases occurring among the for eign population and 156 fatal cases among the native population, during the period December 5 to 31, 1921. On January 14, 1922, smallpox was stated to be still seriously prevalent.

Vaccination and Vaccination Histories.

The report of the health department for November, 1921, published in the Municipal Gazette, December 22, 1921, of Shanghai, China, shows that smallpox appeared at Shanghai in October, 1921, and manifested sharp increase in November. The only reported cases occurred among the foreign population. In 45 investigated cases the vaccination history showed that 14 had never been vaccinated, 17 had not been vaccinated since infancy, 10 had not been vaccinated within three years, and 4 cases vaccinated within three years gave a history of doubtful result. Of 12 fatal cases, 5 had never been vaccinated, 4 had not been vaccinated since infancy, 1 was stated to have been unsuccessfully vaccinated previous to arrival at Shanghai, and of 2 there was no history.

The last previously reported outbreak of smallpox at Shanghai was in 1917. This outbreak was stated to have led to a vigorous campaign of vaccination. During 1919 and 1920 there were no reported deaths from smallpox among Chinese, and this led to neglect of vaccination.

ECUADOR.

Plague—Guayaquil.

During the period December 16 to 31, 1921, 11 cases of plague with 3 deaths were reported at Guayaquil, Ecuador.

Plague-Infected Rats Found.

During the period under report, out of 3,000 rats examined at Guayaquil, 50 rats were found plague-infected.

MADAGASCAR.

Plague—Tananarive.

Plague was reported at Tananarive, Madagascar. February 4, 1922.

PANAMA.

Smallpox.

Smallpox was reported present, in the Republic of Panama, January 26, 1922, in Bocas del Toro and Chiriqui Provinces. In Bocas del Toro Province ten cases were reported, January 18, at the village of Sursuba, about 21 miles from Almirante, an important fruit center. In Chiriqui Province the center of prevalence was stated to be in the vicinity of Boquete Bajo. Smallpox was previously reported present in Chiriqui Province December 22, 1921.[1]

SIBERIA.

Epidemic Typhus—Chita.

Typhus fever was reported epidemic at Chita, Siberia, December 26, 1921.

SWITZERLAND.

Influenza—Basel—Zurich.

Influenza has been reported in Switzerland as follows: Week ended January 14, 1922, at Basel, 1,326 cases; at Zurich, 243 cases with 6 deaths, with a total for Zurich from November 13 to December 31, 1921, of 88 cases with three deaths, and from January 1 to 14, 1922, of 294 cases with three deaths.

---

[1] Public Health Reports, Jan. 13, 1922, page 76.

TURKEY.

Plague—Constantinople.

A case of plague was reported at Constantinople during the week ended January 7, 1922.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During Week Ended Feb. 17, 1922.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	Dec. 18–24	8	8	
Madras	Dec. 25–31	1	.....	
Philippine Islands:				
Manila	Dec. 18–31	35	16	

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia:				
New South Wales—				
Sydney	Jan. 29–Feb. 11	2	.....	
Queensland—				
Brisbane	Jan. 22–28	1	.....	
Brazil:				
Bahia	Dec. 11–17	3	2	
Ceylon:				
Colombo	do	4	4	
Ecuador:				
Guayaquil	Dec. 16–31	11	3	Rats examined, 3,000; found infected, 50.
Egypt				Jan. 1–12, 1922: Cases, 5; deaths, 2.
City—				
Suez	Jan. 2	1	.....	
Province—				
Girgeh	Jan. 12	1	.....	Septicemic.
India:				
Bombay	Dec. 11–17	2	2	
Karachi	Dec. 25–31	2	2	
Madras Presidency	Dec. 18–31	284	201	
Java:				
East Java—				
Soerabaya	Dec. 4–10	6	6	
Madagascar:				
Tananarive	Feb. 4	.....	.....	Present.
Turkey:				
Constantinople	Jan. 1–7	1	.....	
On vessel:				
S. S. Polycarp	Feb. 3	1	.....	At Para, Brazil, from Ceara, via Manaos, Maranham, and Para, for New York.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Dec. 25–31	.....	1	
Brazil:				
Bahia	Dec. 11–17	1	.....	
Canada:				
Ontario—				
Niagara Falls	Jan. 15–Feb. 4	11	.....	A larger number unofficially reported.
Ottawa	Jan. 22–Feb. 4	10	.....	
Toronto	Jan. 22–28	3	.....	
China:				
Amoy	Dec. 18–31	.....	3	
Foochow	Dec. 11–31	.....	.....	Present.
Do	Jan. 1–7	.....	.....	Do.
Hongkong	Dec. 18–31	2	.....	
Shanghai	Dec. 26–31	3	54	Cases, foreign. Dec. 5–31, 1921: Cases, foreign, 45; deaths, native, 156.
Do	Jan. 2–8	6	43	Cases, foreign, deaths, native. Jan. 14, 1922: Seriously prevalent.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received During Week Ended Feb. 17, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Cuba:				
Antilla	Jan. 22-28	2		At Preston.
Cienfuegos	do	1		From outside city limits.
Dominican Republic:				
San Pedro de Macoris	Dec. 25-31	4	1	Present in vicinity.
Ecuador:				
Guayaquil	Dec. 16-31	3		
Great Britain:				
Manchester	Jan. 1-7	4		
Nottingham	Dec. 4-31	18		
Do	Jan. 8-14	2		
Haiti				Jan. 22-28: Present with a few cases.
Cape Haitien	Jan. 1-14	8		
Port au Prince	Jan. 15-21	2		
India:				
Calcutta	Dec. 18-24	4	3	
Karachi	Dec. 25-31	4	3	
Madras	Dec. 18-31	83	30	
Java:				
West Java—				
Batavia	Dec. 16-22	7	4	Province.
Panama:				
Province—				
Bocas del Toro—				
Sursuba	Jan. 18	10		Village 21 miles from Almirante.
Chiriqui	Jan. 26			Present, with center of prevalence at Bosquete Bajo. Present in December, 1921.
Russia:				
Esthonia	Nov. 1-30	9		
Latvia	do	24		
Spain:				
Barcelona	Jan. 8-14		1	
Straits Settlements:				
Singapore	Dec. 11-17	8	1	
Syria:				
Adana	Jan. 1-7			Present.
Aleppo	do			Do.
Alexandretta	do			Do.
Diarbekir	do			Do.
Mersina	do			Do.
Urfa	do			Do.
Turkey:				
Constantinople	Jan. 1-14	5	4	
Union of South Africa:				
Southern Rhodesia	Dec. 15-21	2		
Transvaal—				
Johannesburg	Nov. 1-30	3		

TYPHUS FEVER.

Algeria:				
Oran	Jan. 1-10		1	
China:				
Harbin	Dec. 19-25	3		
Mexico:				
San Luis Potosi	Jan. 22-28			Present.
Palestine:				
Jerusalem	Dec. 27-Jan. 2	4		
Portugal:				
Oporto	Jan. 8-14	1	1	
Russia:				
Esthonia	Nov. 1-30	1		
Latvia	Nov. 1-30	40		
Siberia:				
Chita	Dec. 26			Epidemic.
Turkey:				
Constantinople	Jan. 1-7	6		
Yugoslavia:				
Zagreb	Jan. 1-7	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921, to Feb. 10, 1922.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Oct. 2-22, 1921: Deaths, 15,017.
Bombay	Oct. 30-Nov. 5	1		
Calcutta	Oct. 23-Dec. 10	54	43	
Karachi	Nov. 6-12		1	
Madras	Dec. 11-17	2	1	
Rangoon	Oct. 1-Dec. 10	21	15	
Indo-China:				
Saigon	Nov. 6-12	1	1	
Java:				
West Java—				
Batavia	Nov. 1-7	2	2	At Lebak.
Philippine Islands:				
Manila	Nov. 13-Dec. 22	20	9	
Poland				Aug. 14-Sept. 10, 1921. Cases, 4; deaths, 1.
Siam:				
Bangkok	Oct. 23-Nov. 26	4	3	

PLAGUE.

Asia Minor:				
Smyrna	Nov. 27-Dec. 3	1	1	
Australia:				
New South Wales—				
Sydney	do	2	1	Dec. 7-13, 1921: Four plague rats.
Queensland—				
Brisbane	Oct. 30-Dec. 24	27	18	Total, Aug. 22-Dec. 24, 1921: Cases, 39; deaths, 25. Total infected rats, 53.
Do	Jan. 21	2		
Cairns	Oct. 30-Dec. 10	6	3	Plague rats: Eight.
Cooktown	Oct. 30-Nov. 5	1		Pestis minor.
Ingham				Nov. 6-Dec. 24, 1921: Plague rats, 14.
Inisfail				Nov. 27-Dec. 3, 1921: One plague rat.
Ipswich	Dec. 11-17	1	1	
Port Douglas	Nov. 13-19	1	1	
Townsville	Nov. 20-Dec. 3	2	2	Total cases, 27; deaths, 18.
Azores:				
St. Michael Island				Nov. 27-Dec. 31, 1921: Cases, 23; deaths, 9.
Arrifes	Dec. 25-31	1	1	
Fenaes d'Ajuda	Nov. 27-Dec. 3			Present.
Ribeira Grande	Nov. 13-Dec. 10	19	8	
Livramonto	Dec. 4-10	2		Vicinity of Ponta Delgada.
Ponta Delgada	do	1		
Brazil:				
Bahia	Oct. 30-Dec. 3	6	7	
British East Africa:				
Uganda	Aug. 1-Sept. 30	85	58	Reports of inspectors, deaths, 142; reports of chiefs, deaths, 641.
Ceylon:				
Colombo	Oct. 30-Dec. 10	6	5	Oct. 30-Dec. 10, 1921: Rodent plague, 5.
China:				
Hongkong	Nov. 20-Dec. 17	6		
Ecuador:				
Guayaquil	Nov. 16-Dec. 15	7	3	Rats examined, 2,958; found infected, 90. Total, July-Dec. 15, 1921: Cases, 28.
Egypt				Jan. 1-Dec. 31, 1921: Cases, 356; deaths, 153.
City—				
Alexandria	Dec. 5-30	7	2	
Port Said	Dec. 20	1		
Suez	Nov. 22-Dec. 31	16	9	
Province—				
Keneh	Dec. 1	1	1	Septicemic.
India				Oct. 23-Dec. 10, 1921: Cases, 6,918; deaths, 5,122.
Bombay	Oct. 23-Dec. 3	4	3	
Karachi	Nov. 6-Dec. 24	3	3	
Madras	Dec. 11-17	1		
Madras Presidency	Nov. 13-Dec. 17	1,763	1,237	
Rangoon	Oct. 1-Dec. 10	74	70	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China:				
Saigon				Nov. 6–Dec. 10, 1921: Rodent plague, 7.
Italy:				
Catania	Nov. 27	1	1	Total, Oct. 16–Nov. 27, 1921: Cases, 8 (of which 1 doubtful); deaths, 5.
Naples (Province)—				
Torre Annunziata	Oct. 22–Dec. 27	2		17 miles from city of Naples.
Venice	Oct. 27	1		
Java				Islands of Java and Madoera, Nov. 1–30, 1921: Deaths, 763.
East Java—				
Soerabaya	Oct. 30–Dec. 3	5	6	
Mauritius (Island)	Oct. 30–Nov. 5	37	31	
Mesopotamia:				
Bagdad	Oct. 1–31	1	1	
Mexico:				
Tampico				Dec. 18–31, 1921: Infected rodents found, 5; total, Jan. 1–Dec. 31, 1921; infected rodents, 322; Jan. 1–21, 1922; 5 plague-infected rodents.
Vera Cruz				One infected rodent caught Dec. 5, 1921.
Peru				Nov. 17–Dec. 15, 1921: Cases, 63; deaths, 22. Occurring in Callao, Huacho, Huaras, Lima, Magdalena Vieja, Paita, Salaverry, and Sechura.
Portugal:				
Lisbon	Dec. 15	1	1	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 9–Nov. 5		2	
Rhodes (Island) (Aegean Sea)	Oct. 13	3	1	
Siam:				
Bangkok	Oct. 23–Nov. 5	1	1	
Straits Settlements:				
Singapore	Nov. 6–12	2	2	
Syria:				
Beirut	Oct. 9–Nov. 20	10	4	
Union of South Africa:				
Orange Free State—				
Bothaville	Nov. 19			Plague-infected mouse found.
Hoopstead	Dec. 4–10	1		In native herd boy.

SMALLPOX.

Bolivia:				
La Paz	Aug. 1–Oct. 31	42	28	
Brazil:				
Bahia	Nov. 6–Dec. 10	3		
Rio de Janeiro	Nov. 13–Dec. 24	11	2	
Sao Paulo	Oct. 31–Nov. 20	2		
British East Africa:				
Uganda	Aug. 1–Sept. 30	7		Reports of inspectors, cases, 4.
Canada:				
Manitoba—				
Winnipeg	Nov. 20–Dec. 3	2		
New Brunswick—				
Charlotte County				Dec. 17, 1921: 31 cases previously reported, occurring at Andersonville and Blacks Harbor. Dec. 18–24, 1921: Cases, 3. Dec. 25–31, 1921: Cases, 2.
St. Stephen	Dec. 11–17	2		
Restigouche County	Dec. 11–31	3		
York County	Dec. 11–17	1		
Ontario—				
Fort William and Port Arthur	Jan. 1–21	3		
Hamilton	Jan. 22–28	3		
Kingston	Jan. 17–23	3		Jan. 16–20, 1922: Two cases reported.
Niagara Falls	Dec. 11–24	2		
Ottawa	....do	17		
Do	Jan. 1–14	11		
Sault Ste. Marie	Jan. 15–21	1		
Toronto	Dec. 11–24	4		
Do	Jan. 1–21	33		
Windsor	Jan. 8–14	1		

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921 to Feb. 10, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Quebec—				
Montreal	Dec. 11–24	1		
Saskatchewan—				
Regina	Jan. 1–7	1		
Saskatoon	Dec. 1–18	6		
Ceylon:				
Colombo	Nov. 27–Dec. 3	1		Port case.
Chile				Nov. 15–21, 1921: Diffused in southern provinces; not epidemic.
Concepcion	Nov. 23–Dec. 19		22	Nov. 15–21, 1921: Present. In vicinity, at Hualqui, cases 32; deaths, 5. Dec. 4–17, 1921: Present.
Coronel	Nov. 15–Dec. 17			Present.
Curanilahue	Nov. 15–21	4		
Talcahuano	Nov. 15–Dec. 24	6		
Temuco	Nov. 15–21	9		
Valparaiso	Oct. 23–Dec. 31		94	
China:				
Amoy	Nov. 16–Dec. 17		4	Nov. 23–29, 1921: Present.
Antung	Nov. 28–Dec. 18	4	1	
Chungking	Nov. 6–Dec. 10			Present.
Foochow	Nov. 6–Dec. 10			Do.
Hankow	Nov. 13–Dec. 31			Do.
Harbin	Nov. 14–Dec. 11	5		
Hongkong	Dec. 3–17	3		
Mukden	Nov. 20–Dec. 31			Do.
Nanking	Nov. 20–Dec. 17			Do.
Shanghai	Oct. 31–Dec. 25	64	140	Cases, foreign: Deaths, Chinese and foreign. Jan. 14, 1922: Conditions serious.
Tientsin	Dec. 11–17	2		In Mission Hospital.
Colombia:				
Cartagena	Nov. 22–28		1	
Cuba				Dec. 4–10, 1921: Cases, 151; in two provinces.
Antilla	Dec. 12–31	3		At Preston.
Do	Jan. 8–21	10	1	
Czechoslovakia:				
Prague	Dec. 18–24		42	
Dominican Republic:				
San Pedro de Macoris	Nov. 20–Dec. 24	27		Estimate of about 500 cases of smallpox in the district of Macoris; of this amount 50 within the city limits.
Santo Domingo	Nov. 15–Dec. 5			In district 401 cases estimated. Dec. 17–24, 1921: Present in vicinity. Jan. 9–16, 1922: In surrounding country, 1,745 cases, (estimated).
Fiume				Dec. 27, 1921–Jan. 2, 1922: Cases, 2.
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	4		And vicinity.
Egypt:				
Alexandria	Nov. 26–Dec. 2	1	1	
Port Said	Dec. 20–26	1		
Finland				Nov. 16–30, 1921: 1 case.
Haiti:				
Cape Haitien	Dec. 11–24	8		
Port au Prince	Dec. 11–31			Present.
India				Oct. 2–8, 1921: Deaths, 28.
Bombay	Oct. 23–Dec. 10	2	1	
Calcutta	Nov. 13–Dec. 17	22	16	
Karachi	Nov. 11–24	24	6	
Madras	Nov. 13–Dec. 17	100	29	
Rangoon	Oct. 1–Nov. 19	2		
Italy:				
Genoa	Nov. 10–20	1		
Messina—				
Messina	Nov. 28–Dec. 4	1		
Pettineo	Nov. 14–Dec. 4	2		
Japan:				
Taiwan Island	Dec. 1–20	2	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Java:				
West Java—				
Bandoeng	Nov. 18–Dec. 8	2		
Batavia	Nov. 18–Dec. 15	4	5	Province: Cases, 10.
Buitenzorg	Nov. 25–Dec. 8	7	1	13 cases with 3 deaths not locally stated.
Krawang	Nov. 18–24	1		
Lebak	Nov. 18–Dec. 8	7	4	
Pandegang	Nov. 25–Dec. 1		1	
Tangerang	Nov. 18–Dec. 8	5	1	
Mesopotamia:				
Bagdad	Oct. 1–Nov. 30	117	50	Epidemic with high mortality in November, 1921.
Mexico:				
Chihuahua	Dec. 5–11		1	
Guadalajara	Nov. 1–Dec. 31	6		
Mexico City	Nov. 20–Dec. 24	51		
San Luis Potosi	Dec. 18–24		2	
Do	Jan. 8–14		2	
Torreon	Dec. 1–31	134		
Panama:				
Ancon				Admitted to hospital by transfer from Panama, Nov. 30, 1921, 1 case. Arrived on sailing vessel from a village on south coast.
Chiriqui Province	Dec. 22			Present.
Panama	Dec. 14	1		On Dec. 21, 1921: 1 additional case from country district of Sabanas, admitted to hospital. Total admissions, Jan. 1–Dec. 21, 1921, 207.
Peru:				
Lima	Nov. 1–30		2	
Poland				Aug. 14–Oct. 8, 1921: Cases, 161; deaths, 33. Exclusive of Brest-Litovsk, Minsk, and Wilno districts.
Portugal:				
Lisbon	Nov. 13–Dec. 31	48	12	
Portuguese East Africa:				
Lourenco Marques	Oct. 1–Nov. 5	2	4	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 9–Nov. 3		3	
Russia:				
Esthonia	Oct. 1–31	20		
Latvia	do	31		Corrected report.
Serbia:				
Belgrade	Oct. 2–Nov. 26	16	4	
Siam:				
Bangkok	Oct. 23–Nov. 5	1		
Spain:				
Huelva	Oct. 1–Nov. 30		2	
Malaga	Nov. 1–Dec. 31		60	
Seville	Nov. 16–Dec. 31		7	
Do	Jan. 8–14		1	
Straits Settlements:				
Singapore	Nov. 6–Dec. 10	35	8	
Switzerland:				
Glarus, Canton	Dec. 10			Epidemic.
Zurich	do	2		In vicinity.
Syria:				
Adana	Dec. 18–24			Present.
Aleppo	do			Do.
Beirut	Oct. 9–Nov. 13	5	2	
Diarbekir	Dec. 18–24			Do.
Mersina	do			Do.
Urfa	do			Do.
Tunis:				
Tunis	Nov. 26–Dec. 23	17	15	
Do	Jan. 1–7		1	
Turkey:				
Constantinople	Nov. 27–Dec. 24	20	4	
Union of South Africa:				
Cape Province	Nov. 5–Dec. 10			Outbreaks.
Natal	Oct. 23–Nov. 12			Do.
Orange Free State	Oct. 23–29			Do.
Transvaal	Oct. 23–Dec. 10			Do.
Yugoslavia				July 24–30, 1921: Cases, 26.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1–Dec. 31	3	.....	
Oran	Dec. 21–31	1	.....	
Austria:				
Vienna	Dec. 4–10	2	.....	
Bolivia:				
La Paz	Aug. 1–Oct. 31	83	65	
Bulgaria:				
Sofia	Dec. 18–24	1	.....	
Chile:				
Valparaiso	Oct. 23–Nov. 26	.....	6	
Concepcion	Nov. 22–Dec. 4	.....	2	
China:				
Harbin	Nov. 7–Dec. 18	9	.....	Jan. 23, 1922: Reported extending from Soviet Russia, along railway line to maritime Provinces.
Egypt:				
Alexandria	Nov. 19–Dec. 31	3	1	
Cairo	Oct. 1–Nov. 4	7	3	
Germany:				
Hamburg	Dec. 11–17	4	.....	
Great Britain:				
Glasgow	Dec. 25–31	1	.....	
Mesopotamia:				
Bagdad	Oct. 1–Nov. 30	2	9	
Mexico:				
Mexico City	Nov. 20–Dec. 24	200	.....	Including municipalities in Federal District.
San Luis Potosi	Dec. 18–24	.....	1	Dec. 25–31, 1921: Present.
Do	Jan. 8–21	.....	.....	Present.
Poland	.....	.....	.....	Aug. 14–Oct. 8, 1921: Cases, 1,431; deaths, 105. Exclusive of Brest-Litovsk, Minsk, and Wilno districts.
Russia:				
Esthonia	Oct. 1–31	14	.....	
Latvia	....do	87	.....	
Serbia:				
Belgrade	Oct. 2–Nov. 26	3	2	
Siberia	.....	.....	.....	Jan. 23, 1922: Present in western districts.
Turkey:				
Constantinople	Nov. 20–Dec. 31	19	.....	
Union of South Africa:				
Cape Province	.....	.....	.....	Oct. 23–Dec. 10, 1921: Outbreaks.
East London	Oct. 30–Nov. 5	1	.....	One death in European at Jenseville, Dec. 6, 1921.
Natal	Nov. 5–Dec. 10	.....	.....	Outbreaks. Stated to be prevalent only in Newcastle District.
Orange Free State	Nov. 13–Dec. 3	.....	.....	Outbreaks.
Venezuela:				
Maracaibo	Dec. 20–26	.....	1	
Yugoslavia	.....	.....	.....	July 24–30, 1921: Cases, 10.

YELLOW FEVER.

Mexico	.....	.....	.....	Year 1921: Cases, 115; deaths, 53.
Colima (State)	.....	.....	.....	Total: Cases, 7; deaths, 4.
Colima	Oct. 27	4	3	
Manzanillo	Aug. 21	3	1	
Jalisco (State)	.....	.....	.....	Total: Cases, 13; deaths, 7.
Guadalajara	Nov. 1–30	1	1	Imported.
Puerta Vallarta (Las Penas)	Oct. 5	11	5	Dec. 19, 1921: Present.
Tonila	Aug. 31	1	1	
Quintana Roo (Territory)—				
Payo Obispo	Aug. 8	1	1	
Sinaloa (State)	.....	.....	.....	Total: Cases, 18; deaths, 9.
Culiacan	Sept. 17	4	1	
Guamuchil	Oct. 10	1	.....	
Mazatlan	Aug. 21	1	1	Imported.
Palmar de los Leales	Sept. 30	12	7	
Tamaulipas (State)	.....	.....	.....	Total: Cases, 18; Deaths, 9.
Tampico	Jan. 11	1	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.

Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

YELLOW FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Vera Cruz (State)				Total: Cases, 75; deaths, 31.
Alamo	June 21	4	1	Oil camp.
Alvarado	July 3	1	1	
Barra de Penn	July 18	1	1	
Cordoba	Sept. 22	5	3	
Cosamaloapam	July 18	14	6	
Nogales	Oct. 28	1	1	
Orizaba	....do	1		
Papantla	Jan. 14	6	3	
Providencia	Oct. 28	3		
Purga	Feb. 7	1	1	
Rancho de Santa Rosa	Oct. 8	2		
Rancho "El Jaguey"	Sept. 14	2	2	
San Pablo (Papantla)	Sept. 12	1		
San Ildefonso	Oct. 17	2		
Tierra Blanca	Sept. 24-Nov. 12	4	3	
Tlacotalpan	Sept. 14	1	1	
Tuxpan	Jan. 3	8	2	
Vera Cruz	Jan. 15	18	7	Two of these cases imported. Dec. 20-26, 1921: Cases, 1; deaths, 1. Imported.

×